INTERNATIONAL WATERFOWL RESEARCH BUREAU

WOODCOCK & SNIPE RESEARCH GROUP

NEWSLETTER

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International Waterfowl and Wetland Research Bureau

WOODCOCK AND SNIPE RESEARCH GROUP

Newsletter No 15 December 1989

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EDITORIAL

This Newsletter number fifteen of the woodcock and Snipe Research Group (WSRG) shall inform about research going on and scheduled, preliminary results and short notes of interest.

Research

The International Woodcock Project supervised by Graham Hirons had to come to an end last year. So we appreciate the efforts of the French colleagues to extend their activities beyond the borders of their home country. They were successful in ringing remarkable numbers of woodcock in Morocco and especially in Norway (p. 42).

Woodcock wing sampling is carried on in several European countries, mainly in Denmark, France and Britain. These studies are coordinated and evaluated by John Harradine (B.A.S.C., Marford Mill, UK), coordinator of the Duck Wing Research Group of IWRB. More attention is also paid now to wings of the Common Snipe (p. 23); next issue of the Newsletter will inform about a first analysis in France.

Meetings

During the XXXIV Executive Board Meeting of IWRB at Astrakhan/USSR in September 1989 the coordinator took the opportunity to contact Russian biologists interested in woodcock and snipe research. Thanks to "glasnost" and "perestroika" it is much easier now to communicate. So there is some hope for fruitful cooperation in the future. This is in so far highly desirable as by far most of our woodcocks and snipes are bred within the vast territory of the USSR, and because these species are appreciated as game birds over there too (more than a million woodcocks are harvested annually in the USSR).

We would like to inform WSRG-members about the eighth American Woodcock Symposium that will be held in West Lafayette, Indiana, 29 October - 1 November 1990. The Symposium is intended to review research activities accomplished since the last symposium held in 1980 and will feature invited critical review papers from distinguished biologists, as well as technical sessions, a poster session, and a field trip. Papers presenting research or management activities from across the woodcock's range, particularly outside of the conventional woodcock topics and including Eurasian woodcock, are especially encouraged. The proceedings will be peer-reviewed and are proposed to be published as a volume in the U.S. Fish and Wildlife Service's Biological Reports series. Authors wishing to present papers, posters, or to publish unpresented papers are invited to submit preliminary abstracts by 15 January 1990. Abstracts should be no more than 2 double-spaced typed pages, and should describe the problem studied, study methodology, results, and conclusions. The Program Committee will review abstracts and notify authors of acceptance by 15 February 1990. Abstracts should be submitted to: Greg Sepik, U.S. FWS, Moosehorn National Wildlife Refuge, P.O. Box 1077, Calais, ME 04619, 207/454-3521. Other inquiries as announcement for participation to: Brad Bortner, U.S. FWS, Office of Migratory Bird Management, Laurel, MD 20708, 301/498-0308.

As the previous ones this symposium surely will provide highly interesting results of woodcock research and management in North America.

In this connection we have to think about our next symposium. The last (third) Woodcock and Snipe Workshop had taken place in October 1986 in Paris. That time we intended to hold the next one in a country of Eastern Europe. However, due to the political changes going on in the moment, colleagues from there do not recommend this for the nearest future. So we would like to have the opinion of WSRG-members on the following points:

- When should the Fourth Workshop take place: in 1991, 1992 or 1993?
- Where should we organize it? There is an offer from the recently established European Wildlife Research Institute (EWI) in FRG to hold it either in the Higher Black Forest or at University of Saarbrücken, depending on the number of participants. Or shall we contact the Italian Colleagues to have it in a southern-European country?

So, please let the coordinator know as soon as possible, latest by 30 June 1990, your opinion on this matter.

Publications

Reviews on recent publications will be attached to the next Newsletter. Proceedings of the Second and Third Woodcock and Snipe Workshop (1982 and 1986) are still available, either from IWRB-headquarters (Slimbridge, UK) or from the coordinator.

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NATIONAL NOTES

AUSTRIA

Some observations on Woodcock migration in Austria and Western Hungary, 1988.

Philipp Meran

Generally, in 1988 record numbers of Woodcock have been observed, in spring as well as in fall, at least as many as during earlier record years in the early 1980ies. Most likely due to the extremely mild winters woodcock were observed at locations where they usually cannot dwell the cold season.

Spring migration: Rather late, on 15 March the first woodcock was observed in Eastern Austria (Burgenland). Then migration started vehement until 9 April when it abruptly came to an end, probably because of the early and warm spring. Altogether 384 observations of roding woodcock were made in only on hunting area (Klingenbach) and 40 birds bagged, almost exclusively in the evening. There seems to be some evidence that several groups of migrants went through consecutively, as they used different roding and feeding areas. Many birds went feeding on arable fields at night.
In Eastern Hungary woodcock had arrived considerably earlier, the first ones by 3 March. There were peaks around 18-21 and 25-28 March, but by 4 April migration was over.
The following birds bagged when roding in March 1988 were analysed:

Austria		Sex	Age	Weight (gr.)
18.3.	Klingenbach	♂	juv	275
18.3.	Klingenbach	♂	ad	325
18.3.	Klingenbach	♂	ad	350
19.3.	Klingenbach	♀	juv	315
20.3.	Klingenbach	♀	juv	255
20.3.	Klingenbach	♂	juv	315
21.3.	Siegendorf	♂	ad	322
22.3.	Klingenbach	♂	ad	345
22.3.	Klingenbach	♀	ad	360
23.3.	Klingenbach	♂	juv	335

Hungary		Sex	Age	Weight (gr.)
24.3.	Balatonkeresztúr	♂	juv	310
25.3.	Hollád	♂	ad	347
25.3.	Sarvaj	♂	ad	275
26.3.	Balatonfenyves,Berek	♀	juv	325
27.3.	Balatonkeresztúr	♂	ad	272
27.3.	Balatonkeresztúr	♀	ad	300
27.3.	Balatonkeresztúr	♂	juv	288
27.3.	Balatonkeresztúr	♂	juv	276
27.3.	Balatonkeresztúr	♂	juv	271
29.3.	Hollád	♂	ad	305

Fall migration: First migrating birds arrived in Eastern Austria (steiermark) by end of September and numbers increased after 10 October. During drive hunts for small game woodcock were flushed in numbers not observed since the early 1980ies, namely between 20 and 40 per day. Due to a sudden coldspell all woodcock were gone after 16 November.
The following birds bagged in fall 1988 were analyzed:

		Sex	Age	Weight (gr.)	
10.10.	Kremser	♀	ad	294	
10.10.	Kremser	♂	ad	308	
15.10.	Leski-Halt	♂	juv	285	
19.10.	Gasselsdorf/Sulm	♀	juv	270	
23.10.	Kirchberg/Raab	♀	ad	367	pair
23.10.	Kirchberg/Raab	♂	ad	350	pair
24.10.	Klugbauer (Rosenkgl)	♂	juv	343	
27.10.	Sauerbauer (Rosenkgl)	♂	ad	367	
27.10.	Sauerbauer (Rosenkgl)	♂	ad	359	
28.10.	Gasselsdorf/Sulm	♀	juv	334	
31.10.	Gasselsdorf/Sulm	♂	ad	337	
3.11.	Gasselsdorf/Sulm	♂	juv	318	
8.11.	Gasselsdorf/Sulm	♀	ad	357	
9.11.	Kirchberg/Raab	♀	ad	351	
16.11.	Kirchberg/Raab	♂	ad	395	

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FRANCE

Report on Woodcock Research in France - Season 1988/89.

Ch. Fadat, Y.Ferrand and F. Gossmann

I Monitoring of the breeding area

Monitoring of the woodcock breeding area in France has begun in spring 1988. Its aim is to detect variations in this area (increasing or decreasing) as well as in the French breeding population.
Because of the difficulties to find nesting females easily males are censused during roding. Though there is no stable pairbond and though a number of males doesn't necessarily reflect an equal number of females, we are sure that observations of roding birds in May and June indicate females are breeding in the studied forest. Thus, breeding areas can be calculated from the roding areas. In practice, randomly defined listening points are visited each year in May and June. From the points 10% of the forest area is watched over. A single annual session is sufficient to detect whether there is some roding or not.

I - 1 Roding occupation rates

Thirty countries (départements) participated in this large inquiry in spring 1989 (fig. 1). The results show that about a quarter of the visited sites were occupied (mean of occupation rate = 0.247). In 1988 this rate was very close (0.259). No statistical difference was detected. This means that the total area where roding could be observed and thus, where breeding occured in 1988, has not changed in 1989 in the countries studied. Woodcock densities, which can be estimated in a relative manner by separating the sites where more than 4 contacts were seen, have neither changed statistically.
It has to be taken into account that roding in March-April cannot be taken as reference because at this time of the year, migratory and sedentary birds are equally roding.

I - 2 Nesting

No systematic study of nesting is now carried out in France because of the difficulty of gathering data.
However several broods were ringed especially in mountain sites.

II Migration and wintering studies

II - 1 Ringing of wintering woodcocks

An extensive report on the activities is given on page 10 (in French). Since 1983/84 when special programs have been started ringing activities have constantly increased and are now conducted all along the Channel and Atlantic coasts and in 4 countries in sotheastern France. In 1988/89 35 different teams had been working in 25 countries and ringed a total of 653 woodcocks.
Recovery rates (mainly of birds shot) were 15% with no significant variation within the last three years. Two thirds of these birds were recovered in the same winter when ringed, and 94% at the place of ringing, average distance being 3.7 kms. This high site fidelity was confirmed by 41 retraps in 1988/89. Rings were carried an average of 25 days (15 to 30 days, dependent obviously on hunting pressure).

II - 2 Analysis of hunting bags

II - 2 - 1 Weather conditions

Winter 1988-89 was like the previous one particularly mild but inequal rainfalls caused a drought in the S-W of France. Thereby, the carrying capacity was very variable depending on the region: very high in the middle mountains but much lower in Aquitaine (SW France).

II - 2 - 2 Woodcock densities

Figure 2 shows the variations of regional abundance indexes which correspond with average densities observed by hunters. Like in 1987/88, we can see a low occupation of the Atlantic coast compared with the average of the last decade. The opposite is true for the inner area. Nevertheless, for the country as a whole, the average index is equal to 0.132 versus

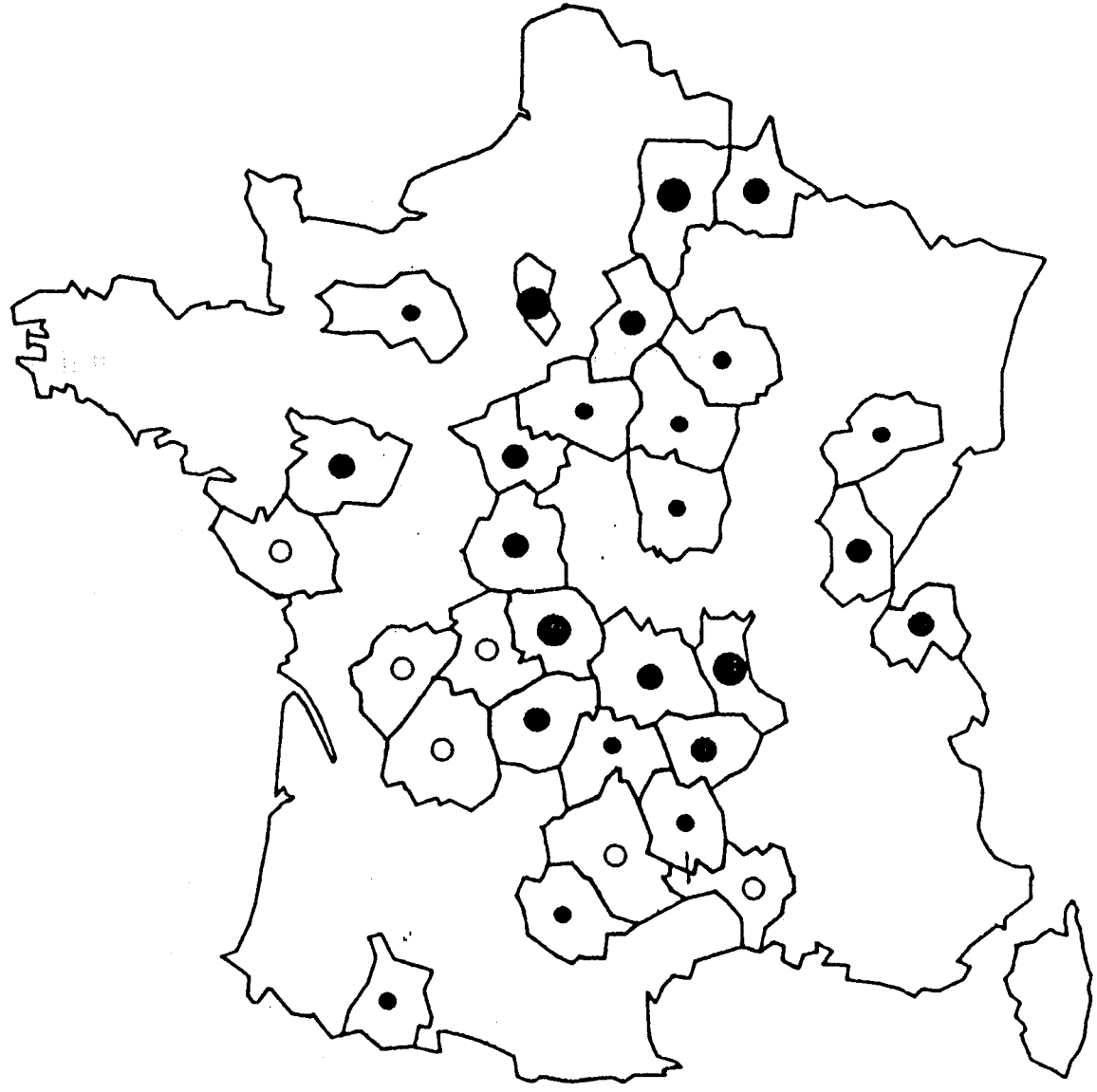

Figure 1 : Location of participating counties to the roding monitoring in 1989 and occupation rate for each of them. (○ :0% ; ● :1-25%; ●:26-50%; ●:>50%)

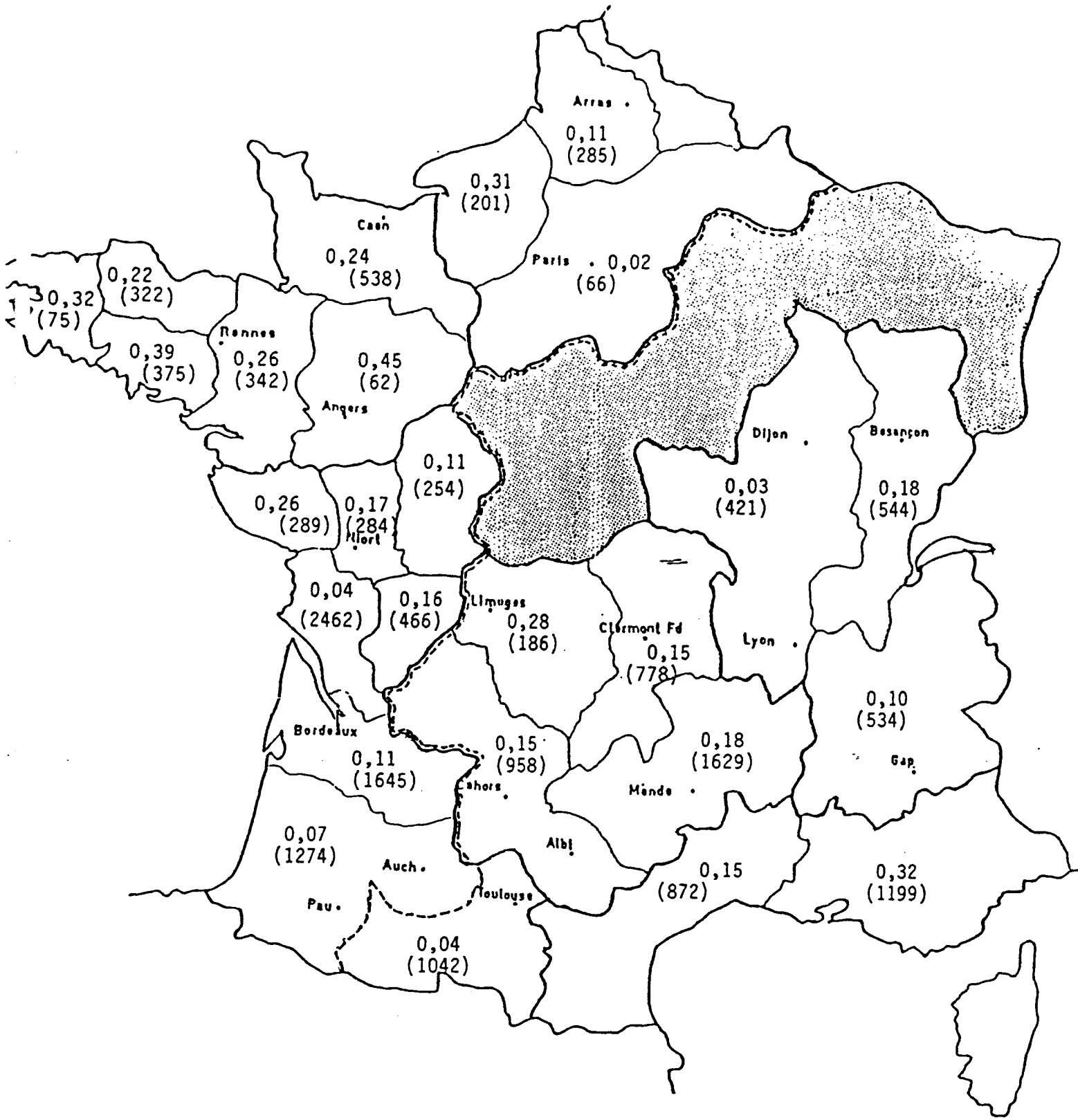

Figure 2 : Woodcock densities (I.C.A. 2p) in 1988-89.

Woodcock densities are given as annual indexes of hunting abundance (October to February). These indexes are proportional to the number of shot woodcocks per hunter and per hunting day and, also, to the total number of woodcocks present in a given region. The number of hunting trips used for the computations is presented in brackets.

0.109 in 1987/88 (fig.3), e.g. an increase of 20% due to the high densities in all the regions at the beginning of migration (October - beginning of November). At this period of the season young birds represent the quasi-totality of migratory woodcocks in the hunting areas and thus, we may assume this high abundance is caused by a good breeding season in the North of Europe.

Everywhere present, in plains and mountains, these juveniles stayed on the spot or nearby during the wintering period because of the absence of coldspells which usually is pushing them to the Atlantic and Southern coasts.

The only disturbing element in this uniform distribution was the drought modulated by the type of soil and/or the exposition which either caused the absence of woodcock where it was very severe, or high densities where some moisture permitted woodcocks to feed (SW part of the Massif Central).

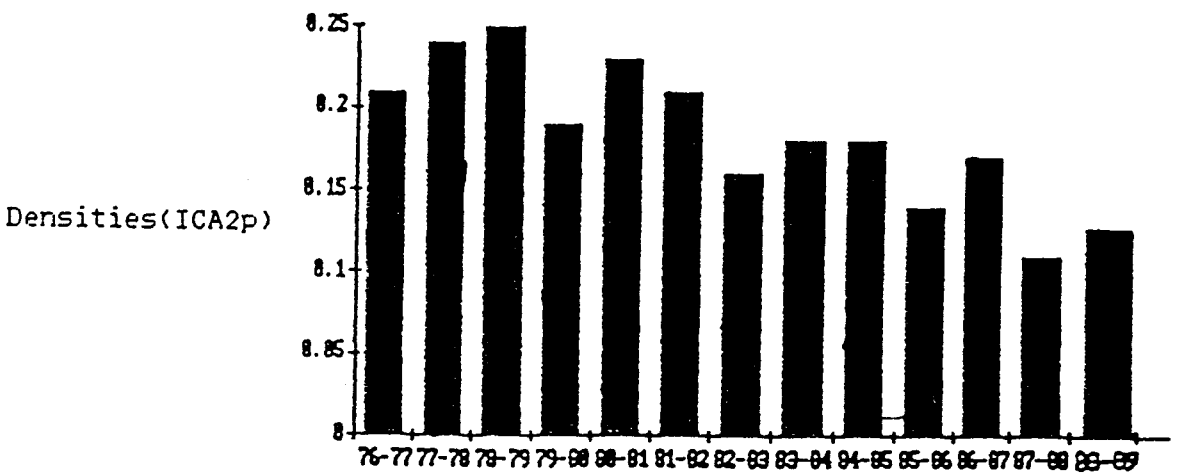

Figure 3 : Inter-annual variations of woodcock densities seen by the hunters, expressed as Cynegetical Indexes of Abundance (I.C.A.2p) during the last 13 hunting seasons throughout the country.

II - 2 - 3 Composition of hunting bags

II - 2 - 3 - 1 Sex-ratio (proportion of males)

The sex-ratio of the sample (3168 woodcocks) is 41.8%, thus representing the mean over the last decade. This may be taken as a warning element because a decrease in the proportion of females, if confirmed, may result in a decrease in the size of the population.

II - 2 - 3 - 2 Age ratio (proportion of juveniles)

This last season the proportion of juveniles was 69% (n = 5850 woodcocks) e.g. a decrease of 7 points compared with the last two seasons (76%). This may contradict the findings of an increase of mean densities and the hypothesis of a good breeding season. However, we have to remember that in the wintering sites densities principally depend on the number of surviving adults which come back to the same place each winter. They were relatively more numerous in 1988/89 than in the previous years, which caused an increase of the densities.

III Conclusions

The 1988-89 wintering season exhibited a twofold particularity:
- high densities in all regions at the beginning of wintering caused by a good production of young in the North of Europe.
- absence of important eratism as of December linked to the mildness of winter which caused densities to decrease on the Atlantic coasts at a time of the season when usually they are increasing. So, curiously, the wintering areas sensu stricto were poorly occupied to the benefit of the inner transit areas where the woococks stayed all winter.
Because of the low mortality of woococks in the inner part of the country compared with the Atlantic coasts, a high number of adults should come back to the same place in winter 1989/90 to hold densities at a similar level as in 1988/89, proposed weather condintions are normal. These predictions resulting from the analysis of hunting bags could later be improved by an analysis of the survival rate estimated from the time of ring carrying and of the size of the breeding population. However, 4 or 5 monitoring years will still be required to find out trends if, of course, the variations are high enough to be significant.

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ORBITUARY - Dante Fraguglione

One of the most enthusiastic lover of the long-beaked game bird has passed away in 1989. Dante Fraguglione was not only a passionated woodcock hunter, but also a dedicated author of innumerable publications, the most famous being his precious book "La Becasse des Bois", a monography of the woodcock. His pronounced attitude for his favoured way of woodcock hunting with dogs and against all the other methods, especially harvesting roding birds, of course caused differences during our symposia. Nevertheless we surely will miss this lively and dedicated colleague and his sense of humor at future meetings.

HK

Rapport Becasse - Baguage 1988-89

Y. Ferrand and F. Gossmann

Introduction

Issu du travail collectif des services techniques des Fédérations départementales de chasseurs, de la Garderie nationale de la chasse et de la faune sauvage et du service technique de l'Office national de la chasse, ce rapport présente le bilan du baguage Bécasse pour l'hiver 1988/89.

1 - Méthode et lieux de capture

1-1 Méthode

Les opérations de baguage se sont déroulées de nuit, en utilisant la méthode générale décrite dans les rapports annuels précédents.

Seules 5 captures ont été faites différemment :

- en forêt de Pont-Calleck dans le Morbihan, 2 captures ont été effectuées à l'aide de nasses, en utilisant le système "piège escargot", installées dans la remise diurne en sous-bois ;

- dans l'Hérault, 3 captures et 1 contrôle ont été réalisés au moyen de filets verticaux tendus au crépuscule autour d'une mare. En région méditerranéenne, les bécasses font souvent une courte halte à un point d'eau au moment de la passée pour s'y baigner.

1-2 Les lieux de capture

Près de 170 localités dans 25 départements différents (carte 1) ont été visitées lors des sorties nocturnes.

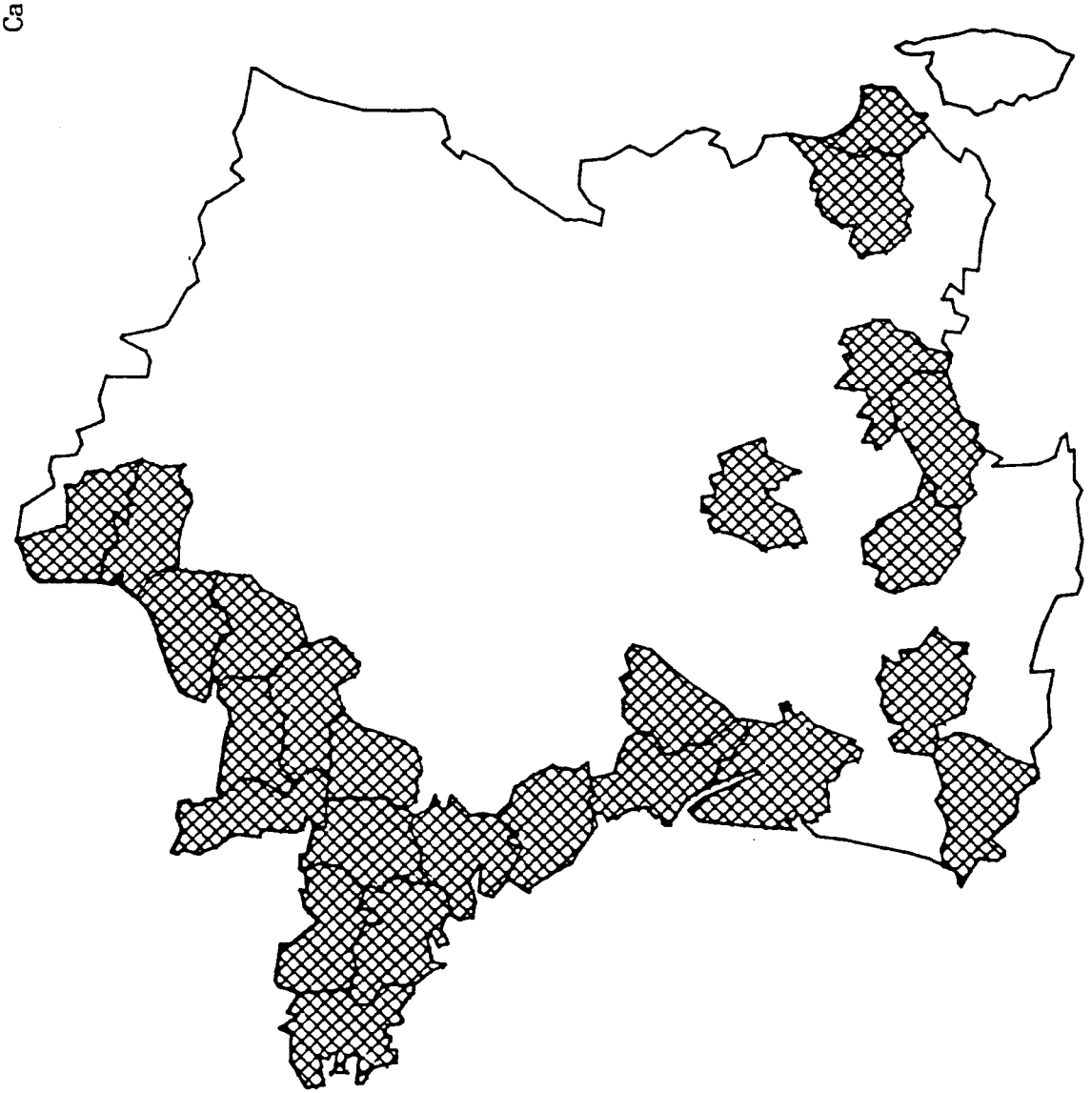
La bordure Manche-Atlantique, presque intégralement couverte, demeure bien sûr la zone privilégiée pour les marquages intensifs. En région méditerranéenne, dans les 4 départements de l'Hérault, du Gard, des Alpes de Haute-Provence et des Alpes Maritimes, des travaux intéressants ont également été effectués. Quelques bécasses ont aussi été baguées dans le Cantal.

2 - Résultats

2-1 Bilan des captures (figure 1)

Au cours de la saison 1988-89, 653 bécasses ont été baguées, c'est-à-dire 26 % de plus que l'an passé. Ce chiffre représente presque le tiers des 2.075 bécasses marquées depuis la saison 1983-84. Les captures demeurent néanmoins difficiles dans le sud de la France. Les densités y sont un peu plus faibles et la découverte des remises nocturnes est rendue plus ardue car il semble qu'il n'y ait pas de règle pour la fréquentation durable et annuelle de certains milieux par les bécasses. Pour ces régions, il paraît encore plus important d'intervenir très tôt en saison, c'est-à-dire en novembre.

Carte 1 : Répartition géographique des départements ayant participé aux opérations de baguage en 1988-89



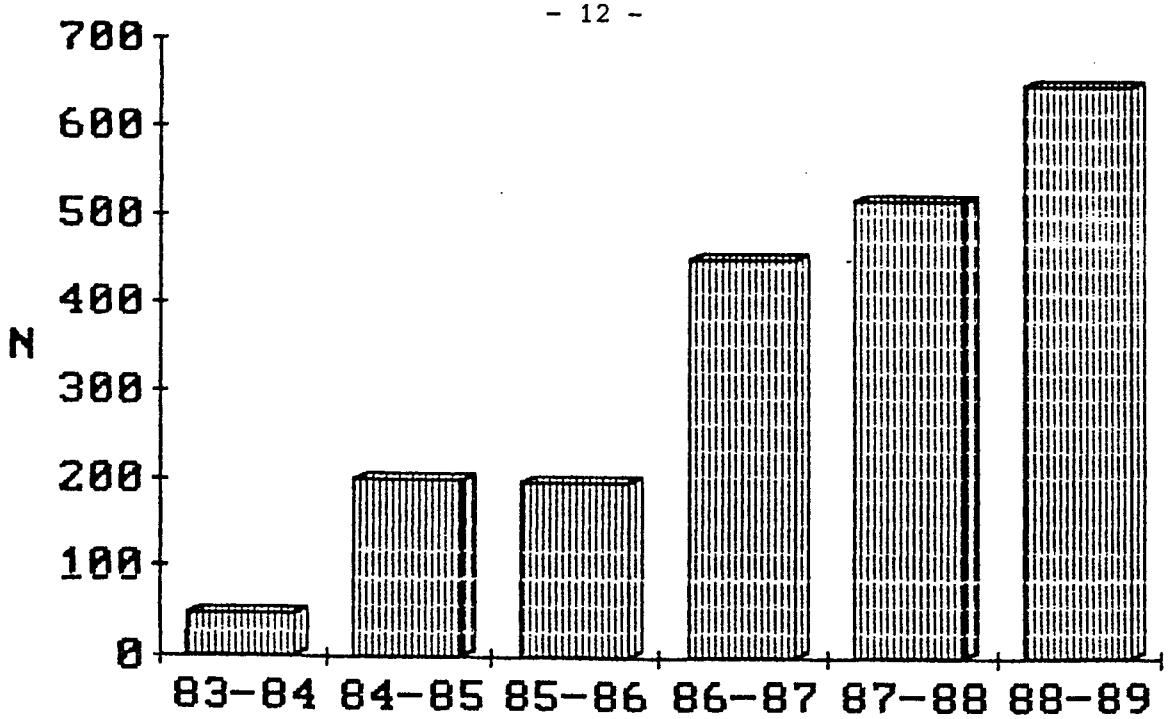


Figure 1 : Evolution inter-annuelle du nombre de bécasses baguées de 1983-84 à 1988-89

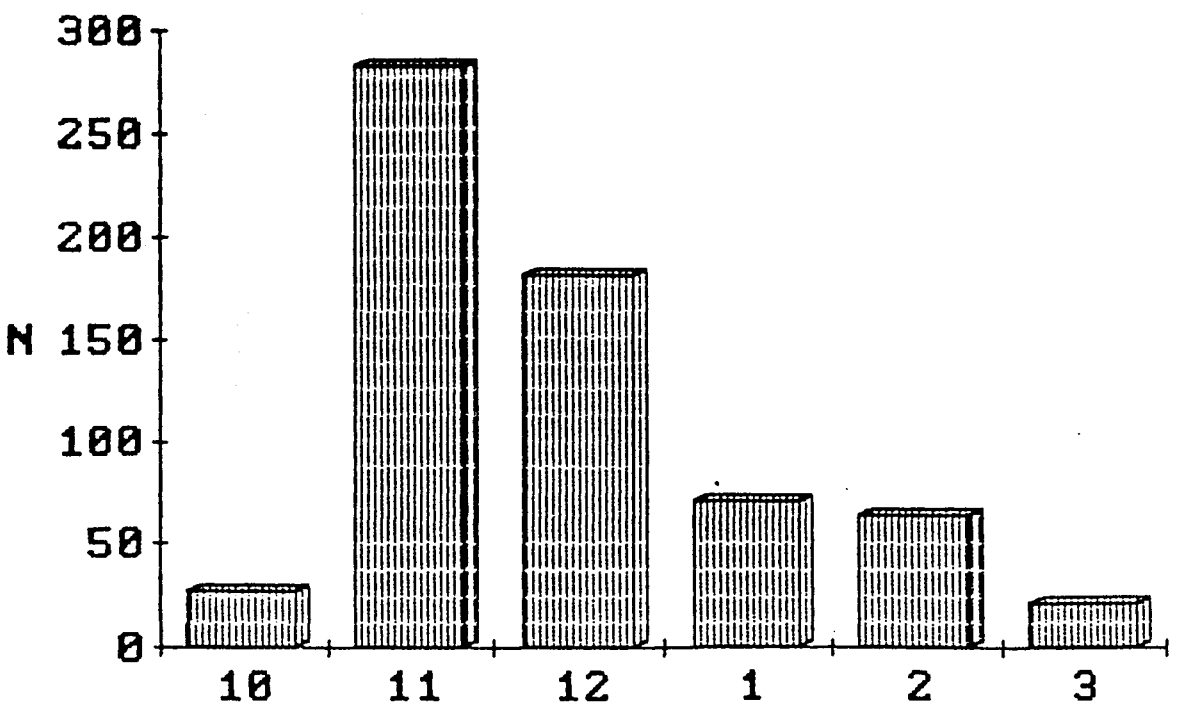


Figure 2 : Evolution mensuelle du nombre de bécasses baguées en 1988-89

2-2 Les sorties

Au cours de cette saison, 574 sorties nocturnes ont été effectuées par environ 35 équipes différentes. L'accroissement du nombre de sorties est de 24 %.

2-3 Evolution mensuelle des captures (figure 2)

Alors que la proportion d'oiseaux bagués en novembre était de 29 % en 1986/87 et de 35 % en 1987/88, elle a été de 43,5 % au cours de cette saison. Nous tendons donc nettement vers notre objectif qui est de baguer le plus tôt possible en saison. Ainsi, 28 bagues ont été posées en octobre, mois où nous n'avions jamais connu une telle réussite. Elle s'explique par une arrivée massive et précoce des oiseaux mais aussi par la préparation et la rapidité de réaction des équipes de bagueurs.

La fin de la saison a été nettement moins favorable, compte-tenu des faibles densités et d'une moindre disponibilité des équipes pour ces travaux de baguage.

2-4 Taux de réussite

Le taux de réussite moyen pour 1988/89 est de 23,5 % (tableau 1), valeur très voisine de celle des autres saisons. Il est cependant très variable d'un département à l'autre et ces taux départementaux sont difficiles à comparer entre eux car différents facteurs interviennent outre l'expérience de l'équipe de baguage. Les meilleurs taux de réussite s'observent toujours dans les régions à densité moyenne avec une équipe expérimentée.

2-5 Les reprises

a) *Nombre et lieux des reprises*

Depuis le début des opérations de baguage, nous avons eu connaissance de 451 reprises intra ou inter-annuelles, en France ou à l'étranger.

Au cours de cette dernière saison, ce sont 96 reprises intra-annuelles et 52 reprises inter-annuelles qui nous sont parvenues. La carte 3 représente les reprises intra-annuelles de cette saison 1988-89. La carte 4 fait le bilan des reprises inter-annuelles, c'est-à-dire les reprises effectuées une ou plusieurs années après la saison de baguage.

Parmi les nouvelle reprises connues, 5 ont eu lieu à l'étranger, ce qui porte à 17 leur nombre total (carte 2) :

- 2 reprises en juillet 1988 en Suède, dont 1 particulièrement septentrionale, au nord du cercle arctique dans la région du Norbotten ;

- 1 reprise en Pologne près de Varsovie à l'automne ;

- 1 reprise en Belgique à l'automne ;

- 1 bécasse baguée en novembre 1985 dans les Côtes d'Armor et reprise en novembre 1988 en Grande-Bretagne près de Portsmouth.

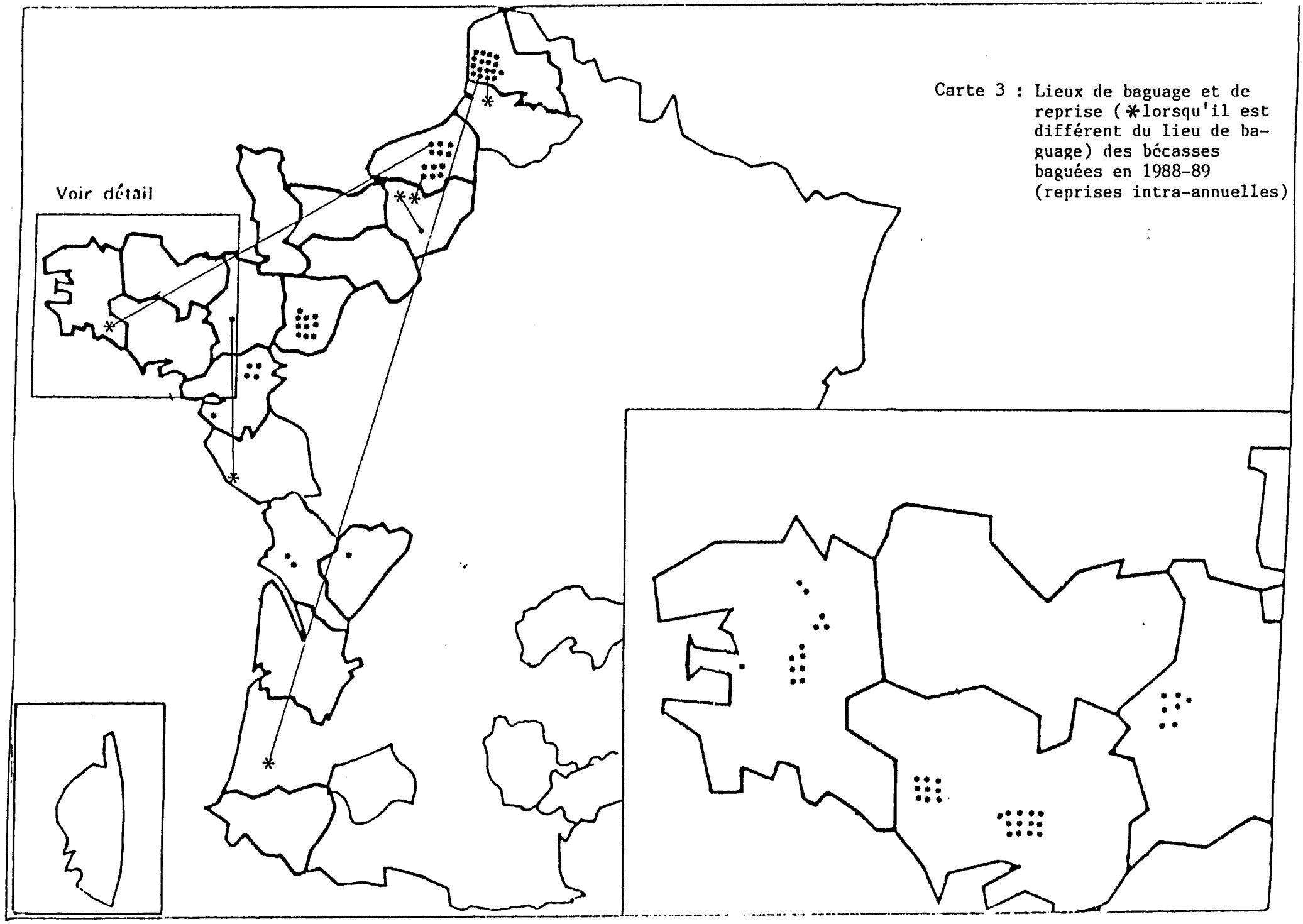
Département	Nombre de sorties nocturnes	Nombre de contacts (N)	Nombre de bécasses baguées de nuit (B)	Nombre de contrôles (C)	Nombre de bécasses baguées de jour *	Taux de réussite ** $T = \frac{B + C}{N}$
04 - Alpes de Haute-Provence	12	-	-	-	-	-
06 - Alpes-Maritimes	8	-	-	-	-	-
14 - Calvados	37	92	8	1	-	9,8 %
15 - Cantal	20	15	4	-	-	-
16 - Charente	9	19	4	-	-	-
17 - Charente-Maritime	41	101	13	1	-	13,9 %
22 - Côtes d'Armor	12	85	14	1	-	17,6 %
27 - Eure	21	188	29	6	-	18,6 %
29 - Finistère	57	432	100	8	-	25,0 %
30 - Gard	10	8	3	-	-	-
32 - Gers	5	3	-	-	-	-
33 - Gironde	22	41	3	-	-	7,3 %
34 - Hérault	4	-	-	1	2	-
35 - Ille-et-Vilaine	48	330	71	4	-	22,7 %
44 - Loire-Atlantique	50	107	49	2	-	47,6 %
53 - Mayenne	36	123	47	3	-	40,6 %
56 - Morbihan	54	653	127	5	2	19,7 %
61 - Orne	7	19	1	-	-	-
62 - Pas-de-Calais	37	269	59	-	-	21,9 %
64 - Pyrénées Atlantiques	18	20	-	1	-	-
76 - Seine-Maritime	46	413	105	8	-	27,3 %
80 - Somme	13	32	7	-	-	21,9 %
81 - Tarn	1	-	-	-	-	-
85 - Vendée	7	25	5	-	-	-
Totaux et Moyennes	575	2.934	649	41	4	23,5 %

* captures non comprises dans le calcul du taux de réussite

** $N \geqslant 30$

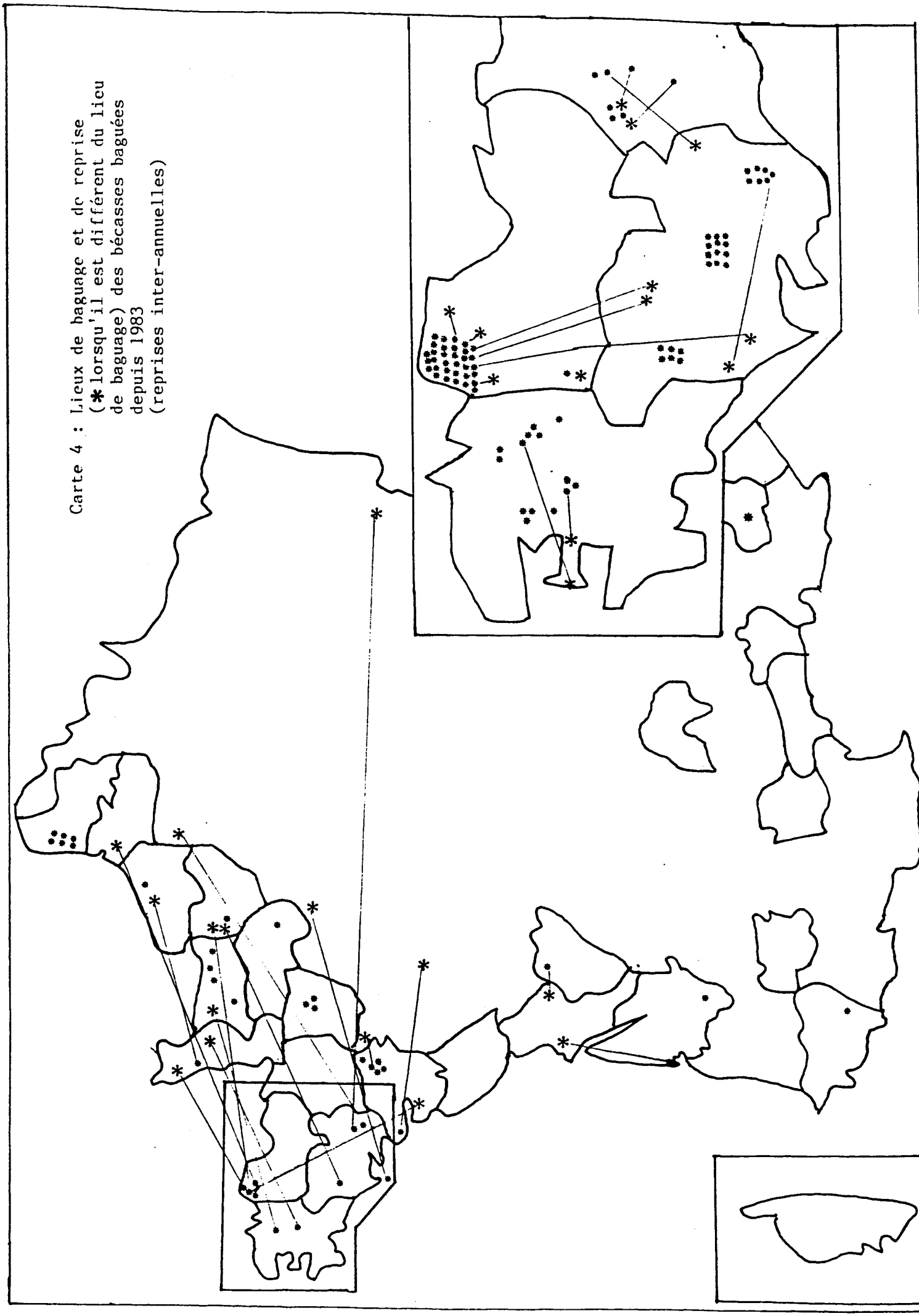
Tableau 1 : Résultats globaux des captures au cours de la saison 1988-89

Carte 2 : Reprises en Europe de bagues posées en France au cours des saisons 1983-84 à 1988-89



Carte 3 : Lieux de baguage et de reprise (*lorsqu'il est différent du lieu de baguage) des bécasses baguées en 1988-89 (reprises intra-annuelles)

Carte 4 : Lieux de baguage et de reprise
(* lorsqu'il est différent du lieu de baguage) des bécasses baguées depuis 1983
(reprises inter-annuelles)



Ce dernier oiseau transitait-il par les Iles Britanniques avant de regagner sa remise bretonne ?

b) *Taux de reprise* (tableau 2)

Le taux de reprise intra-annuel moyen, d'une valeur de 14,7 %, est stable, ceux des deux saisons précédentes étant de 13,7 % en 1986/87 et de 13,4 % en 1987/88. On note une forte disparité entre les différents départements et aussi d'une année à l'autre pour un même département.

c) *Délai de reprise intra-annuel*

Comme pour le taux de reprise intra-annuel moyen, la valeur moyenne du délai de reprise intra-annuel est sensiblement le même : 22 jours en 1986/87, 24,1 jours en 1987/88, 24,2 jours en 1988/89.

Il y a aussi une forte variabilité entre départements. Ce délai de reprise est de 30,5 jours en Mayenne, de 17,9 jours en Ille-et-Vilaine, départements voisins, et de 15,4 jours dans le Pas-de-Calais.

Il n'y a pas de relation entre les taux de reprise intra-départementaux et les délais de reprise intra-départementaux.

d) *Distance de reprise*

Parmi les 96 reprises intra-annuelles, 4 seulement sont à plus de 100 km. Parmi ces dernières, on peut remarquer une bécasse baguée dans le Pas-de-Calais et reprise dans les Landes, une autre capturée en Seine-Maritime et reprise dans le sud du Finistère (carte 3).

La distance moyenne de reprise des autres oiseaux est de 3,57 km (écart-type : 9,64). Cette donnée confirme les résultats déjà acquis.

2-6 Les contrôles

Durant ces six saisons de baguage, 114 contrôles ont été effectués dont 41 au cours de la dernière saison. Une bécasse a été contrôlée 5 fois entre novembre 1988 et février 1989 dans l'Eure.

Ces contrôles et, à fortiori, les contrôles multiples, sont favorisés par des sorties fréquentes sur une même remise nocturne. L'évolution vers un plus grand nombre de points de baguage peut donc tendre à réduire ces contrôles mais permettre cependant d'avoir des données plus fiables à partir des reprises.

3 - Discussion

3-1 Evolution inter-annuelle du délai de reprise intra-annuel

Les délais moyens sont présentés dans le tableau 3. Aucune tendance de cette variable n'est décelée depuis 1985-86. Différence non significative ($F = 1,68 < 3,85$; $\alpha = 0,01$).

Département	Nombre d'oiseaux bagués	Nombre de reprises	Taux de reprise	Délai moyen de reprise intra-annuelle en jours	écart-type
16 - Charente	4	1	25,0 %	6,5	-
17 - Charente-Maritime	13	2	15,4 %	-	-
27 - Eure	29	1	3,4 %	-	-
29 - Finistère	100	13	13,0 %	24,4	21,6
33 - Gironde	3	2	66,6 %	-	-
35 - Ille-et-Vilaine	71	8	11,3 %	17,9	24,6
44 - Loire-Atlantique	49	5	10,2 %	48,2	34,1
53 - Mayenne	47	10	21,1 %	30,5	22,0
56 - Morbihan	129	24	18,6 %	24,2	20,5
62 - Pas-de-Calais	59	17	28,9 %	15,4	10,9
76 - Seine-Maritime	105	12	11,4 %	25,4	28,8
Autres départements	55	0	-	-	-
Totaux et moyennes	664	95	14,7 %		

Tableau 2 : Taux et délai de reprise dans les départements ayant des reprises intra-annuelles d'oiseaux bagués en 1988-89

3-2 Age et taux de reprise intra-annuel

Les données récoltées depuis 1983-84 montrent que le taux de reprise intra-annuel des adultes est inférieur de moitié à celui des jeunes de première année. Les premiers ont un taux de reprise de 8,5 % (49 / 579) et les seconds de 17,3 % (252 / 1.460). Cette différence est statistiquement significative ($X^2 = 24,81 > 6,63$; $\alpha = 0,01$).

Ce résultat montre bien que les adultes se trouvent dans des zone privilégiées par rapport à l'activité cynégétique.

3-3 Age et délai de reprise intra-annuel

Les données récoltées jusqu'en 1987-88 ont été traitées. Les adultes présentent un délai de reprise intra-annuel de 25,7 jours ($\sigma^2 = 501$; $n = 37$) et les jeunes de première année de 28,2 jours (672,3 ; 171). Aucune différence statistique n'est mise en évidence ($Zc = 0,60 < 2,57$; $\alpha = 0,01$).

Autrement dit, lorsque adultes et jeunes sont soumis à une certaine pression de chasse, leur période moyenne de survie est quasiment identique. Le chasseurs ne prélève donc sans doute pas plus facilement les jeunes que les adultes ou alors les adultes n'ont pas une meilleure défense que les jeunes face aux chasseurs.

3-4 Distances de reprise inter et intra-annuelles

Seules les reprises obtenues en décembre, janvier et février, à partir de bagues posées de décembre à mars pour les saisons 1983-84 à 1987-88 ont été analysées. Le résultat est présenté en figure 3. Les distances de reprise inter-annuelles supérieures à 10 km sont statistiquement plus nombreuses que celles des reprises intra-annuelles ($X^2 = 8,63 > 6,63$; $\alpha = 0,01$). Ce résultat est malgré tout limité et peut s'expliquer, entre autres, par les oiseaux bagués près du littoral au moment des coups de froid de janvier et février de ces dernières années et repris les années suivantes dans leurs lieux d'hivernage initiaux.

3-5 Comparaison des délais de reprise intra-annuels dans le Finistère

Depuis 1986-87, un nombre assez important de reprises peut être étudié dans ce département. Ces reprises de bagues posées sur un grand nombre de localités du Finistère fournissent un bon exemple de suivi départemental de la pression de chasse. Le tableau présente les résultats. Aucune tendance dans l'évolution du délai de reprise n'est décelée ($F = 0,651 < 7,12$; $\alpha = 0,01$).

Ceci indique que la pression de chasse sur la Bécasse n'a probablement pas été modifiée de façon sensible sur ces localités.

Conclusion

L'orientation donnée ces dernières années aux travaux de baguage des bécasses en hivernage se confirme tout à fait à l'approche de cette nouvelle saison de baguage 1989/90.

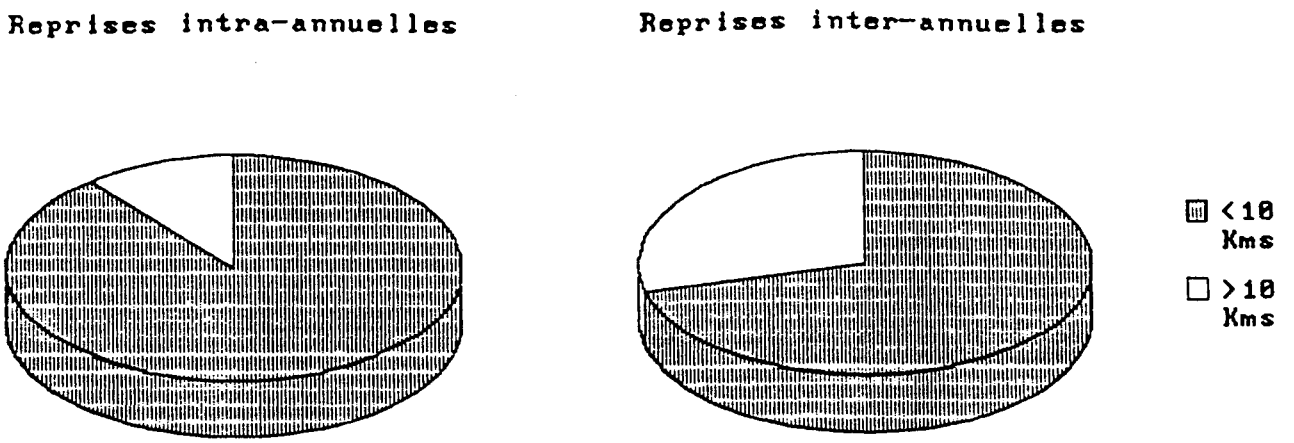


Figure 3 : Comparaison des distances de reprises intra et inter-annuelles

	1985-86	1986-87	1987-88	1988-89
$\bar{X}$ (jours)	33,7	24,4	24,9	24,6
Variance	718,4	456,7	722,8	517,8
n	42	72	74	93

Tableau 3 : Délais de reprise intra-annuels globaux de 1985-86 à 1988-89

	1986-87	1987-88	1988-89
$\bar{X}$ (jours)	27,1	19,2	24,4
Ecart-type	20,5	17,2	20,8
n	32	12	13

Tableau 4 : Délais de reprise intra-annuels dans le département du Finistère de 1986-87 à 1988-89

Dans un souci de continuité pour l'acquisition de données, nous reprendrons quasiment l'ensemble des recommandations de la saison dernière :

- conserver les sites de baguage de ces dernières années, en y baguant au moins le même nombre d'oiseaux ;

- conserver la chronologie des sorties de l'an passé avec un effort soutenu pour capturer en octobre-novembre ;

- prospecter et capturer sur de nouveaux sites à condition que cela ne nuise pas au suivi des sites plus anciens.

Ce dernier point concerne plus principalement les départements ayant débuté récemment ces opérations de baguage et où il faut progresser dans l'expérience et la connaissance.

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GOSSMANN F., FERRAND Y., LOIDON Y., SARDET G. (1987). Méthode et résutlats de baguage de Bécasse des bois (*Scolopax rusticola*) en Bretagne. In : Acts of the 3rd European Woodcock an Snipe Workshop

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The same authors presented a poster at the XIX th IUGB-Congress 1989 in Trondheim/Norway with the following abstract:

FERRAND, Y. and GOSSMANN, F., Office National de la Chasse - C.N.E.R.A. Afifaune Migratrice, 5 Rue de St Thibaut - St Benoist - Auffargis - 78610 - Le Perray en Yvelines, France.

AN EFFICIENT METHOD OF CATCHING WOODCOCKS

From 1983, we developed an active method of catching woodcocks (Scolopax rusticola) during wintering. The captures occur during the night when the birds stay in the open habitats. The method requires two people, one of them has a portable headlight and a battery, and the other one carries a long hand-net. About 2,000 woodcocks were ringed in France for the last five years. The success rate (N. of catches/N. of located woodcocks) is about 25 %. In 1987 and 1988, we caught 172 woodcocks in Norway at the beginning of the autumn migration, and we conclude that the method is also available in the Scandinavian areas and at this time of the year. With a high recovery rate in Europe (10 %), the development of this catching method could contribute to the monotoring of the woodcocks European populations.

Towards a method to age and sex Common Snipe (Gallinago gallinago) by external criterions.

M. Devort

Although many studies have tried to determine an external way for aging and sexing common snipe, some questions still persist. We certainly shall not be able to answer all of them, but the number of birds that we have studied for twelve years allows us to bring a modest contribution to this problem.

During ten years, we have made measurements and dissections on about 600 birds we personnaly bagged in the south-west of France. Since 1986, we have been helped by the 250 members of the "CLUB INTERNATIONAL DES CHASSEURS DE BECASSINES" founded in Paris by Jean de Mareüil. They sent us from France, Ireland, Portugal, Morocco, Senegal and even China and Vietnam : 600 wings and tails the first season, 900 the second, and over 1.300 this season. On nearly half of these birds, an autopsy had been made with determination of age and sex. Our objective was of course to try to sex and age the remaining birds.

External age determination using the wing

We shall not recall here the phenotypic differences between adult type and juvenile type feathers of the snipe's wing.

Upperwing coverts and tertials for instance have been precisely described and with some practice the age type of these feathers appears clearly.

Likewise we shall not come back to the timing of the post juvenile moult. We justneed to mention that some juveniles perform an early moult of the wing, moult that give them the aspect of an adult bird.

So we shall successively :

- Try to define age criteria on the flight feathers (primaries and secondaries not concerned by the post-juvenile moult).
- Consider the different possibilities we have to face to age a common snipe using its wing.

Flight feathers :

- Secondaries (fig.1)

We were not able to confirm Cramp's statement about :
"Juveniles having white tips to secondaries usually narrower than adult".

Fig 1

WHITE TIPS OF THE FIFTH SECONDARY S5

EXTRÉMITÉ BLANCHE DE LA CINQUIÈME SECONDAIRE S5

INNER WEB
VEXILLE INTERNE

ADULTES $\bar{M} = 4,28$ mm ($\sigma = 1,24$; $n = 134$)

JUVÉNILES $\bar{M} = 4,20$ mm ($\sigma = 1,16$; $n = 204$)

$\Sigma = 0,56$

OUTER WEB
VEXILLE EXTERNE

ADULTES $\bar{M} = 6,40$ mm ($\sigma = 1,68$; $n = 119$)

JUVÉNILES $\bar{M} = 7,01$ mm ($\sigma = 1,64$; $n = 205$)

$\Sigma = 3,16$

Fig 2

LARGEUR de la RÉMIGE PRIMAIRE P10 (à 4 cm de l'extrémité)

WIDTH of PRIMARY P10 (4 cm from of the tip)

ADULTES M = 11,63 mm ($\sigma = 0,57$; $n = 341$)

JUVENILES M = 10,96 mm ($\sigma = 0,60$; $n = 354$)

$\Sigma = 14,88$

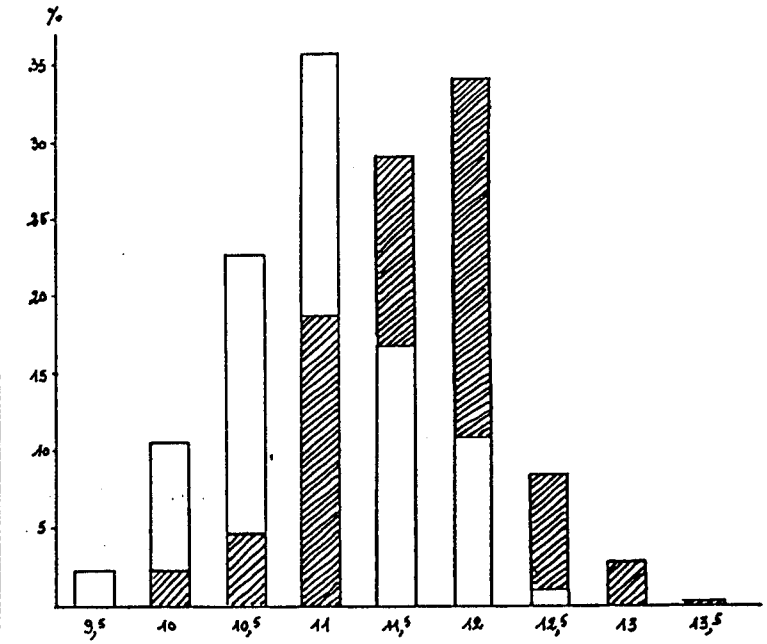
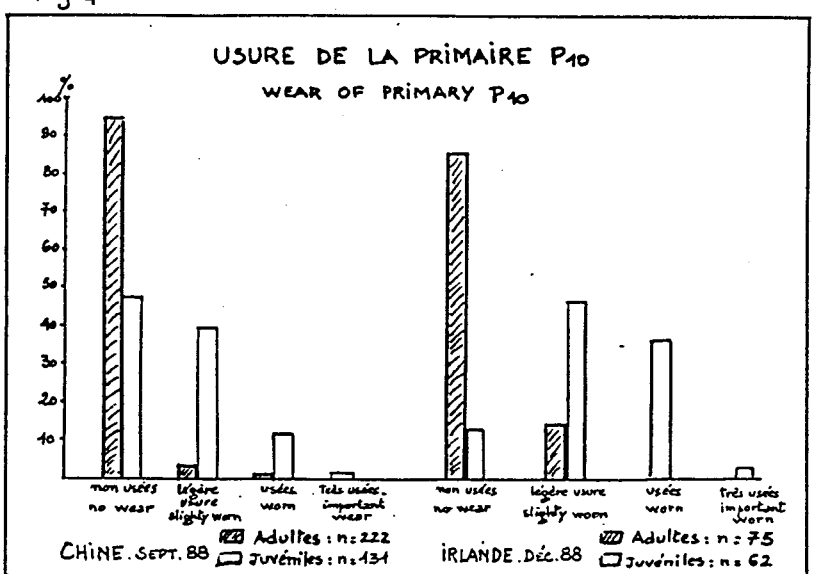


Fig 4


USURE DE LA PRIMAIRE P10
WEAR OF PRIMARY P10
%
100
90
80
70
60
50
40
30
20
10
non usées no wear
légère slightly worn
usées worn
Très usées important wear
Adultes : n : 222
Juvéniles : n : 131
CHINE . SEPT. 88
non usées no wear
légère slightly worn
usées worn
très usées important wear
Adultes : n : 75
Juvéniles : n : 62
IRLANDE . DÉC. 88

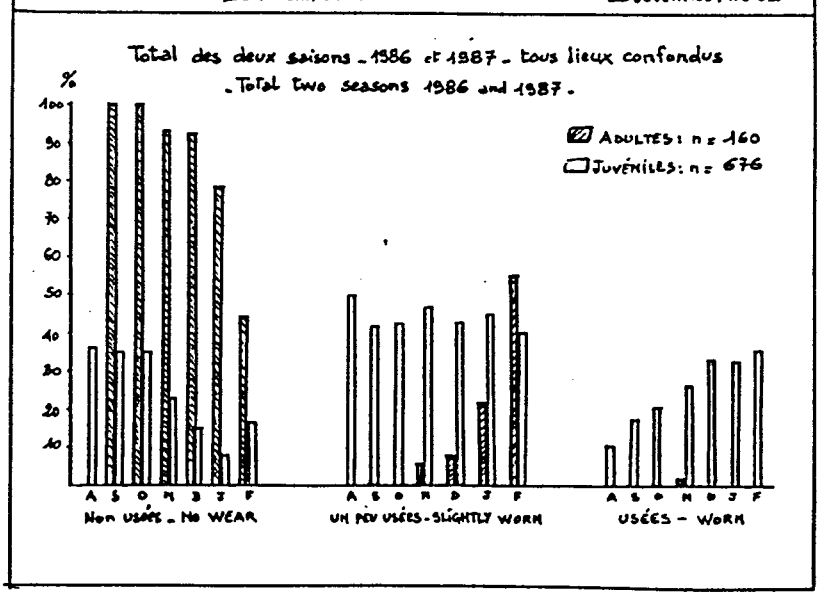

Total des deux saisons - 1986 et 1987 - tous lieux confondus
- Total two seasons 1986 and 1987 -
%
100
90
80
70
60
50
40
30
20
10
ADULTES : n = 160
JUVÉNILES : n = 676
A S O N D J F
NON USÉS - NO WEAR
UN PEU USÉES - SLIGHTLY WORN
USÉES - WORN

Fig 3

We chose the fifth secondary and measured its white tip along the shaft on the two webs.

Obviously there was no difference for the inner web and for the outer one a slight difference but with a shorter white tip among the ADULTS We chose not to use this criteria.

- Primaries :

Three criteria have been studied on the outer primary P10 : its width, the pattern of its extremity and its wear.

Width (fig.2)

We measured the width of P10 at four centimeters from its tip.

The difference between the mean width of juveniles and adults outer primaries appears clearly and is significant.

But as we can see the overlap between the two prevents us to use this characteristic as a precise mean of age determination.

Pattern :

The juvenile outer primary shows in most cases a pale spot at the extremity of the outer web, spot that does not appear on the adult's on which a fine white line is often seen.

Anyhow this characteristic is rather irregular andcan be used just an odd criteria.

Wear :

We all know that this criteria is commonly used for age determination on Scolopax rusticola. Yet it has not been used on common snipe because some adults present a worn P10 and some juvenile a plan one.

We chose to study it in any case precisely and established four wear classes : feathers with no wear, a little wear, worn and very worn. On the results of two seasons we can see (fig 3) :

- that the adults feathers are only in few cases "worn" and never "very worn" even if from November to February the "little wear" class grows progressively.
- that until January over 90 % of the adults have an outer primary with "no wear", and 100 % for this diagram in Sept.-October.
- that the young primaries suffer a progressive and somewhat regular wear during the season.

All points confirmed by the next diagram of birds from China (Sept. 1988) and Ireland (Dec.1988) (Fig.4).

It appears that this criteria deserves a more serious consideration than it has received until now and that it can be a useful indication in the age determination.

HOW TO AGE A COMMON SNIPE WITH ITS WING ?

What are we going to look for in front of a snipe's wing ?

We shall consider successively five eventualities that can appear during the hunting season.

1 - Presence of at least one juvenile type upperwing median covert.

The bird is a juvenile.

We precise that this feather mustbe clearly identified as juvenile, not to neglect the possibility of such a covert coming through the moults of the preceding year and then being on an adult. Such a one year old feather would be so worn that it would be impossible to identify it as a juvenile feather and that the bird would therefore enter our fourth possibility.

2 - Persistance of a preceding year flight-feather.

This bird is an adult.

As described in the OAG Munster work, this type of primary or more often secondary is easily identified by its brown colour contrasting with the dark grey of the new feathers and sometimes by its important wear.
This suspended post-nuptial moult is an interesting way of aging some adults since it is very easy and applies to a good number of birds.
15.3 % (39 out of 255) of the adults bagged last september in Mandchouria were of this case.

3 - Persistence of a preceding year lesser covert.

This applies mainly to the underwing lesser coverts but also to the smallest of the upperwing ones.

Here again the bird is an adult.

Instead of wearing out, as median upperwing coverts do with time, lesser wing coverts get a typical rusty colour contrasting clearly with the dark grey (underwing) or black (upperwing) of the new adjacent ones.
Most of the case N°2 birds also have this type of feathers but in our chinese sample 12.9 % (33 out of 255)of the adults had old lesser coverts without any old flight feather.
Moreover 21.2 % (18 out of 85) of the adults bagged last December in Ireland were also of this case.

4 - Coexistence of adult type upperwing median coverts and levelled coverts.

In using the term "levelled" we understand coverts whose wear is such that their identification as adult or juvenile type is impossible.

These birds can be either young or adult.

If the bird is an adult, it is very rare that such feathers, charac-

teristic of a suspended post-nuptial moult, do not attend whether old flight feather (case no.2) or old lesser coverts (case no.3).

If it is a young bird, these levelled feathers have been kept for an exceedingly long time, probably during a suspended post-juvenile moult. Two observations confirm this assertation:
First they clearly attend worn adult type coverts whose moult is not recent. Second we chiefly met this sort of birds on typical wintering grounds such as Ireland, Senegal or Vietnam, which explain the high wear of the kept juveniles feathers.
This means that you will nearly always have, on these young birds, a clearly worn outer primary that will easily dissociate them from the very rare adults presenting the same characteristic.

5 - Adult type coverts only.

We face here the most embarrassing possibility, the only really uncertain one. We have to distinguish adult birds from young birds with an advanced post-juvenile moult.

Two criterions have to be faced:
- the wear of the outer primary,
- the wear of the median upperwing coverts.

These two characters will be, during the season, at opposite levels whether the wing belongs to an adult or a juvenile.

As we saw before the primary, at a chosen date, will generally be more worn on a juvenile than on an adult.

Facing this median coverts, at the same date, will show more wear on the adult than on the juvenile since the feathers are older on the first than on the second (early August instead of Sept. to December). (Fig. 5)

We certainly shall not pretend that all the birds can be correctly and easily aged thanks to this method (Fig. 6), but our experience shows that less than 5% of the birds still resist this analysis.

In these extreme cases, the width of the outer primary and its pattern can sometimes be used.

Fig 5

WEAR OF P10 AND UPPER WING COVERTS

BIRDS WITH ADULT TYPE COVERTS ONLY

USURE DE P10 ET DES COUVERTURES ALAIRES SUPÉRIEURES

OISEAUX À COUVERTURES DE TYPE ADULTE SEULEMENT

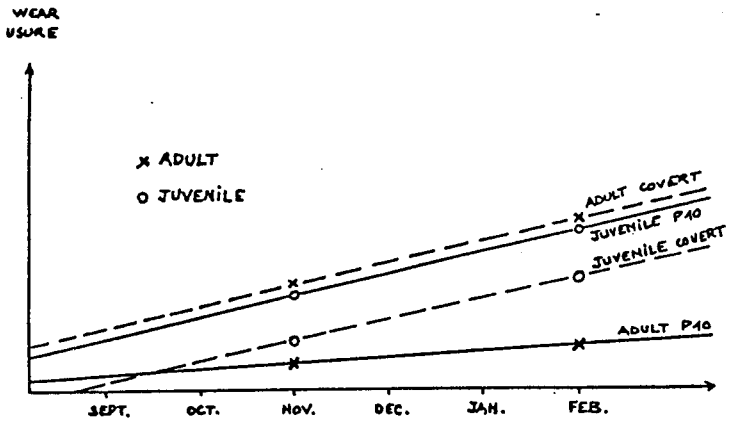
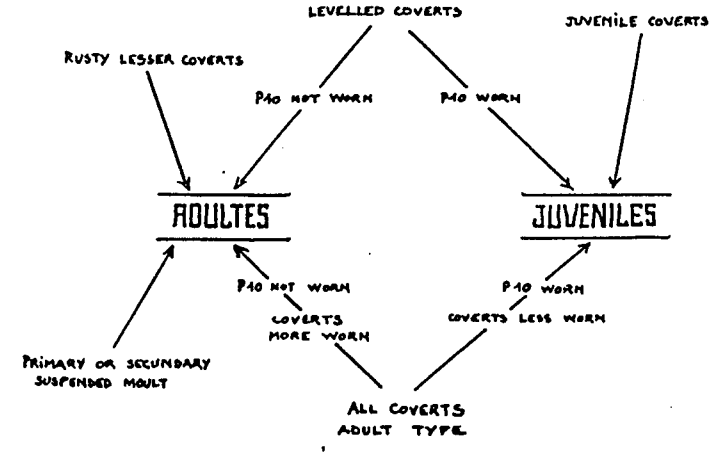


Fig 6

DETERMINATION EXTERNE DE L'AGE



EXTERNAL SEXING OF THE COMMON SNIPE

We will try to determine the sex of the common snipe by the study of the tail alone.

This cannot be done efficiently without a previous distinction of the type of the outer tail feather : adult or juvenile.

Since we will not have the time to develop this part of the study we will just say that the presence or absence of the black tip cannot alone be used for this purpose and that biometric measures are necessary.

This problem will be developped in a paper that will be later published.

Which are the sexual characters connected with the tail ?
In this study, we confirmed or find five characters, bound with the tail feathers, presenting a significant difference between males and females. All, as we will see, are not usable for a practical sex determination, but we thought it was necessary to present them anyway.

1 - The length of the outer tail feather.
This character has been known for a long time.
Our own date confirms what has been previously published. (Fig.7)

2 - The difference between the length of the outer tail feather and the length of the adjacent tail feather.
Karen Strandgaard used the ratio between these two lengths.
The desire to use a simpler way incited us to study the difference instead of the ratio.
It is significatively different, in both the age classes, between male and female . (Fig.8)

3 - The width of the outer tail feather.
Very useful to discern juvenile and adult outer tail feathers, this criteria shows a sexual dimorphism mostly in the juvenile type. (Fig.9)

4 - Diameter of the outer tail feather's shaft.
Beginning this study, we thought it could be key-character for sex determination, but it is not.
The diagram shows its certain but weak sexual significance. (Fig 10)

5 - Colour of the tail feather.
This character is the only one not to be biometric.
The discriminant analysis that we have made on the preceding criteria confirms that the use of the colour is necessary for a

Fig 7

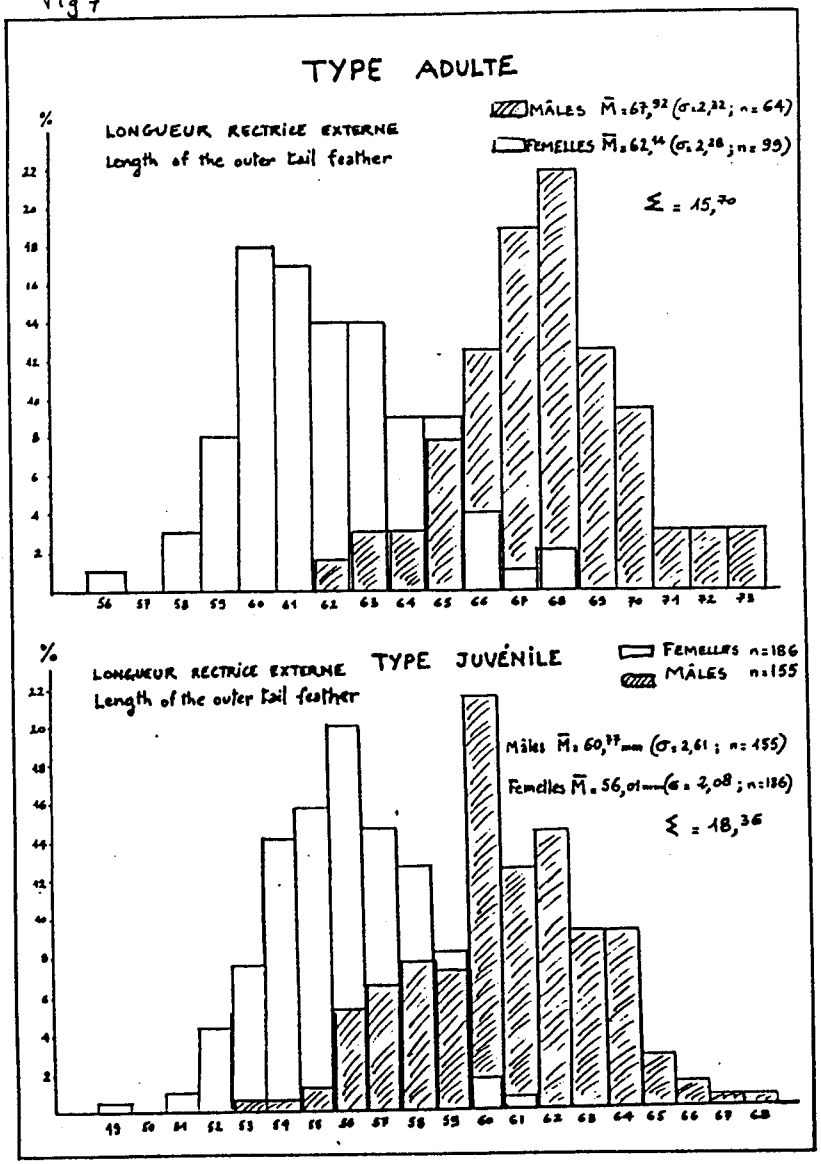

TYPE ADULTE
LONGUEUR RECTRICE EXTERNE
Length of the outer tail feather
MÂLES $\bar{M}$ = 67,92 (σ = 2,22 ; n = 64)
FEMELLES $\bar{M}$ = 62,44 (σ = 2,28 ; n = 99)
Σ = 15,70
%
TYPE JUVÉNILE
LONGUEUR RECTRICE EXTERNE
Length of the outer tail feather
FEMELLES n = 186
MÂLES n = 155
Mâles $\bar{M}$ = 60,37 mm (σ = 2,61 ; n = 155)
Femelles $\bar{M}$ = 56,01 mm (σ = 2,08 ; n = 186)
Σ = 18,36
%

Fig 8

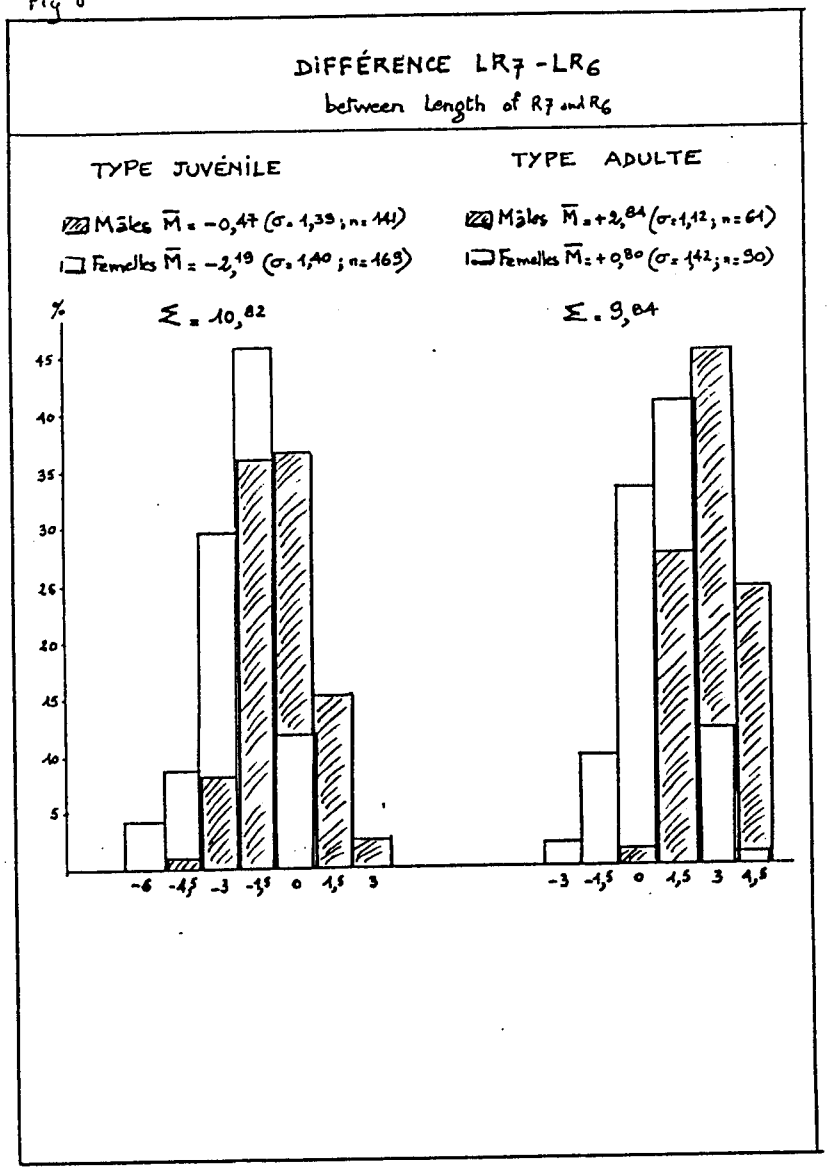

DIFFÉRENCE LR7 - LR6
between Length of R7 and R6
TYPE JUVÉNILE
Mâles $\bar{M}$ = -0,47 (σ = 1,39 ; n = 141)
Femelles $\bar{M}$ = -2,19 (σ = 1,40 ; n = 169)
Σ = 10,82
TYPE ADULTE
Mâles $\bar{M}$ = +2,84 (σ = 1,12 ; n = 61)
Femelles $\bar{M}$ = +0,80 (σ = 1,42 ; n = 30)
Σ = 9,84
%

Fig 9

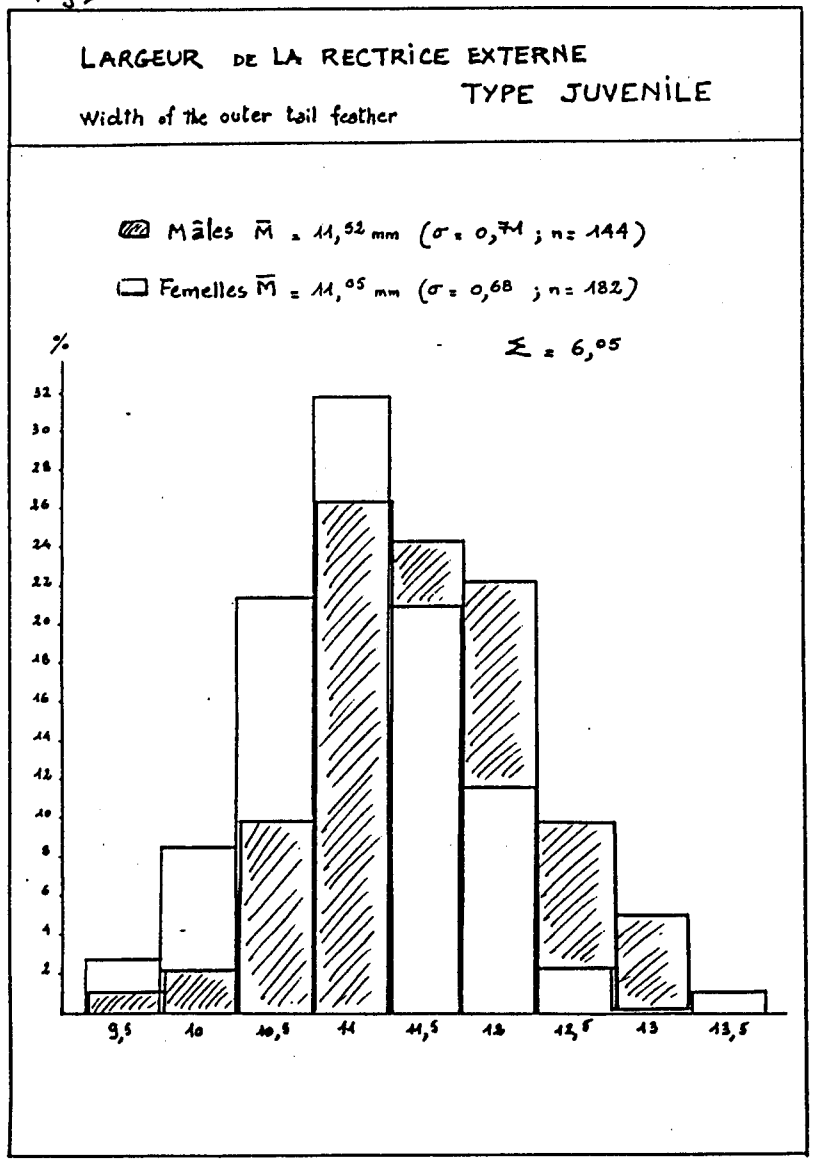
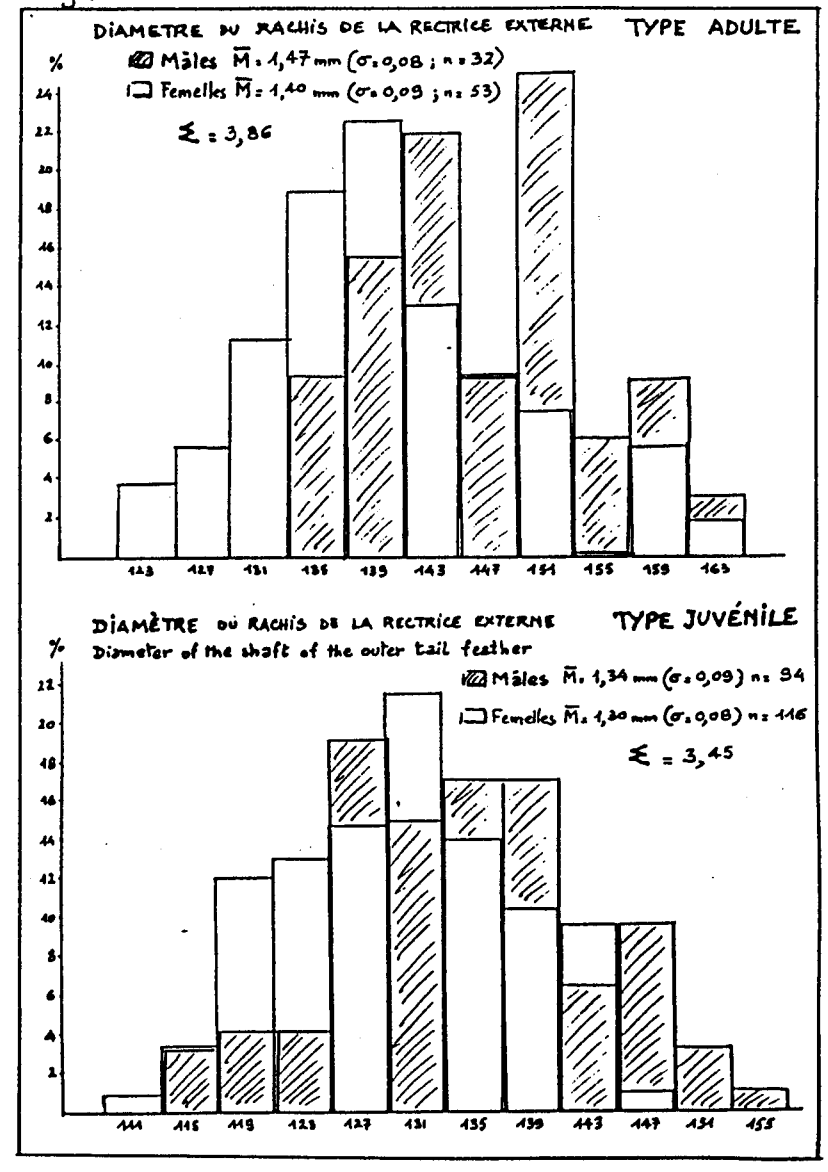

LARGEUR DE LA RECTRICE EXTERNE
TYPE JUVENILE
Width of the outer tail feather
Mâles $\bar{M}$ = 11,52 mm (σ = 0,71 ; n = 144)
Femelles $\bar{M}$ = 11,05 mm (σ = 0,68 ; n = 182)
Σ = 6,05
%
9,5
10
10,5
11
11,5
12
12,5
13
13,5

Fig 10


DIAMETRE DU RACHIS DE LA RECTRICE EXTERNE
TYPE ADULTE
Mâles $\bar{M}$ = 1,47 mm (σ = 0,08 ; n = 32)
Femelles $\bar{M}$ = 1,40 mm (σ = 0,09 ; n = 53)
Σ = 3,86
%
123
127
131
135
139
143
147
151
155
159
163
DIAMÈTRE DU RACHIS DE LA RECTRICE EXTERNE
TYPE JUVÉNILE
Diameter of the shaft of the outer tail feather
Mâles $\bar{M}$ = 1,34 mm (σ = 0,09) n = 94
Femelles $\bar{M}$ = 1,30 mm (σ = 0,08) n = 116
Σ = 3,45
%
111
115
119
123
127
131
135
139
143
147
151
155

simple and efficient sex determination.

In fact, the determination of the colour, as we use it, is less subjective than we would think.

Indeed, we have not to describe a colour but only to compare the colours of two adjacent feathers.

The colour of the outer tail feather (R 7) is determined only by comparison with the colour of the next tail feather (R 6), whatever be this colour.

The five colour types that we will consider correspond to precise definitions : Of course, we are speaking of basic colour of the non-black parts of the web.

- When the colour of R7 is the same as the colour of R6, the outer tail-feather is called : COL (for coloured).
- When R7 is nearly as R6, but slightly lighter, its colour is called : MED +
- When the outer tail feather is white (with no chestnut at all) it is called : BLA (for white in french)
- When R7 is nearly white (traces of beige) its colour is called : MED -
- All the other outer tail feathers, with intermediate colours, are called medium : MED, and will not be used.

We can see on the table N°1 that the extreme colours (BLA and COL) are characteristic of both sexes and that this conclusion can be extended to the MED + and MED - for the adult type of tail feathers.

A method for sex determination with the tail.

Our purpose is to define a simple method, needing a minimum of measurements and observations, with which we can usefully determine the sex of the bird.

The following table (N°2) will show, for each of the three best criteria, the values beyond which the sexing is correct in 90 % of the cases.

The right column of the table helps to keep in mind that only a part of the sample is included in these values.

Table N°1

OUTER TAIL FEATHER COLOR

COULEUR DE LA RECTRICE EXTERNE

	ADULTES		JUVÉNILES	
	MÂLES n = 66	FEMELLES n = 99	MÂLES n = 154	FEMELLES n = 186
Col.	1 (1,5 %)	28 (28,3 %)	4 (2,6 %)	36 (19,4 %)
Med+	4 (6,1 %)	45 (45,5 %)	16 (10,4 %)	59 (31,7 %)
Med.	12 (18,2 %)	21 (21,2 %)	42 (27,3 %)	68 (36,6 %)
Med−	28 (42,4 %)	4 (4 %)	65 (42,2 %)	22 (11,8 %)
Blanc. White	21 (31,8 %)	1 (1 %)	27 (17,5 %)	1 (0,5 %)

Table N°2

	CARACTÈRE CHARACTER	VALEUR VALUE	SEXE SEX	SEXAGES CORRECTS CORRECT DETERMINATION	SEXAGES ERRONÉS WRONG DETERMINATION	% of the sample includ. in these limits / % de l'échantillon compris ds ces limites
RECTRICES ADULTES Tail Feathers	LR7	> 66 mm	Mâles	94,3 % n=50	5,7 % n=3	76,7 %
		⩽ 63 mm	Femelles	97,2 % n=70	2,8 % n=2	
	Couleur	Med− et Bl.	Mâles	90,7 % n=49	9,3 % n=5	80 %
		Med+ et Col.	Femelles	93,6 % n=73	6,4 % n=5	
	LR7-LR6	> 3,5 mm	Mâles	93,8 % n=15	6,2 % n=1	38,4 %
		< 1 mm	Femelles	97,6 % n=41	2,4 % n=1	
RECTRICES JUVENILES Tail Feathers	LR7	> 59 mm	Mâles	94,3 % n=116	5,7 % n=7	68,6 %
		⩽ 56 mm	Femelles	93,7 % n=104	6,3 % n=7	
	Couleur	Bl.	Mâles	96,4 % n=27	3,6 % n=1	20 %
		Col.	Femelles	90 % n=36	10 % n=4	
	LR7-LR6	> 0	Mâles	92,8 % n=39	7,2 % n=3	20,6 %
		< -3,5	Femelles	95,5 % n=21	4,5 % n=1	

Table 3

DÉTERMINATION EXTERNE DU SEXE

OUTER TAIL FEATHER	METHODE		% d'oiseaux sexés SEXED BIRDS	% de sexages corrects correct sex determination	Total correct determin. *
	1er TEMPS	2e TEMPS			
TYPE ADULTE	$LR_7 > 66$ mm = Mâle $LR_7 \leqslant 63$ mm = Femelle	Pour $66 \geqslant LR_7 > 63$ Med − et Bl = Mâle Med + et Col. = Femelle	95,7 %	95,5 %	91,39 %
TYPE	① $LR_7 > 59$ mm = Mâle $LR_7 \leqslant 56$ mm = Femelle	Pour $59 \geqslant LR_7 > 56$ Bl = Mâle Col. = Femelle	75 %	93,7 %	70,27 %
JUVENILE	② $LR_7 > 58$ mm = Mâle $LR_7 \leqslant 58$ mm = Femelle		100 %	83 %	83 %

* % de réussite globale

SEXUAL CHARACTERS LINKED TO THE TAIL

CARACTÈRES SEXUELS SECONDAIRES LIÉS A LA QUEUE

— Length of the outer tail feather.
(STRONACH & HARRINGTON, 1981 ; CRAMP, 1983 ; CLAUSAGER, 1986 ; DEVORT & GRISSER, 1986)

— Difference between the length of the outer tail feather R7 and the length of the nearest tail feather R6.
(STRANDGAARD, 1986)

— Color of the outer tail feather.
(DEVORT & GRISSER, 1986)

— Width of the outer tail feather.

— Diameter of the shaft of the outer tail feather.

The next table (N°3) show that we have choosen :
One method for the sex determination of the birds with adult type tail feathers and two methods for the juvenile type ones.

ADULT TYPE

The birds whose length of R7 is over 66 mm are considered males.
The birds whose length of R7 is equal or under 63 mm are considered females.

For the others whose length is between 66 mm and 63 mm :
the birds whose R7 is classified BLA or MED - are considered males.
and the birds whose R7 is classified COL or MED + are considered females.

The results on the table can be slightly improved if one considers, normally, every bird with a white outer tail feather whatever be his length as a male.

JUVENILE TYPE
First method :

The birds whose length of R7 is over 59 mm are considered males.
The birds whose length of R7 is equal or under 56 mm are considered females.

For the other whose length is between 59 mm and 56 mm :
the birds whose R7 is classified BLA are considered males,
and the birds whose R7 is classified COL are considered females.

Second method :

All the birds whose length of R7 is over 58 mm are considered males,
All the birds whose length of R7 is equal or under 58 mm are considered females.

In all these methods the percentage of success is approximatively the same in the two sexes.

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JAPAN

Distribution and abundance of the Latham's Snipe Gallinago hardwickii in Japan

Y. Fujimaki

The Latham's Snipe Gallinago hardwickii breeds in the northern part of Japan, on Sakhalin Island and in the south of the Far East of the USSR, and winters in southeastern Australia. According to the nation-wide breeding bird survey conducted in 1978 (Japan Environmental Agency 1979) Latham's snipes occur in Hokkaido and the northern half of Honshu (Fig. 1). In addition to these areas, the snipe has been recored from Kyushu, Chugoku district and Shikoku. However, the breeding distribution and density in Honshu has contracted over the past 30 years, and its distribution is restricted to mountain meadows in central Honshu. At present the main breeding range is only Hokkaido, the northernmost island of Japan.
Latham's Snipes arrive in Japan on around 20th April and leave from the middle of August to September to wintering areas. They occupy mainly agricultural lands and along rivers, and begin to active aerial display immediately after their arrival. Aerial display is most active from their arrival to late May, decreased slightly in June and is not observed in July (Nitta & Fujimaki 1985). Average numbers of birds counted indicated a similar seasonal tendency (Table 1). The peak of display occurs just before and after sunrise or sunset.

Latham's Snipes nest on the ground covered with grasses or bamboo grasses at dry habitats including rough pastures, wood islands and shelterbelts in agricultural lands, and young tree plantations. They lay 4 eggs in early May. Chicks hatch from late May to early June after 20 to 22 days of incubation. Active display periods in May coincided with laying and incubating periods of this species.

Latham's Snipes prefer rather dry habitats and avoid wetlands and marsh in contrast to other species of waders. In breeding ground of Hokkaido they occupy a wide variety of habitats, agricultural lands, riverine lands, natural grasslands and open forest ranges.

Numbers of Latham's Snipes were counted at about 210 3 km transects at early morning in May and June, 1984 and 1985. Based on these counts their distribution was shown in small quadrats of 10 x 10 km (Fig. 2). In Oshima peninsula, south-western part, and mountainous areas in central part there were more quadrats where Latham's Snipes were not observed. Average numbers of snipes counted on 3 km transects are shown in large quadrats where 64 small ones were combined (Fig. 3). Numbers of snipes were high with range from 2.9 to 5.2 in plains and from 1.1 to 1.8 in central mountainous and coastal areas.

Abundance of Latham's Snipes varied in different type of habitats. Percentage of quadrats where the snipes were observed was 80% in river side areas, 61% in mountainous areas and 55% in coastal areas (Table 1). Average numbers of birds ranged from 1.8 in mountainous and coastal areas to 2.8 in plains and 3.6 in river side areas (Table 1). Latham's Snipes were most abundant in grasslands and scarce in paddy rice farming areas and young tree plantations (Table 1).

Latham's Snipes occur in a wide variety of habitats except for cities and forests, preferring especially river side areas. Although most of plains and coastal terraces have been almost completely utilised for agriculture or residential areas, breeding habitat of the Latham's Snipe will continue to remain throughout Hokkaido, because they are fairly common even in developed agricultural lands.

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Table I

Distribution and abundance of Latham's snipe in Hokkaido in 1984 and 1985.

	Number of grid squares*	Number of grid squares where snipe were seen (%)	Mean** (range)
Coastal area	59	33 (56)	1.8 (0-13)
Plain	185	150 (81)	2.8 (0-10)
River side	64	51 (80)	3.6 (0-22)
Mountainous area	125	76 (61)	1.8 (0- 8)
Grassland (low grass)	143	106 (74)	2.6 (0-19)
Grassland (tall grass)	25	15 (60)	2.8 (0-10)
Wooded area	36	14 (39)	1.3 (0- 8)
Cultivated field	136	87 (64)	2.5 (0-22)
Paddy field	58	34 (59)	1.6 (0- 7)
Pasture	195	150 (77)	3.0 (0-22)

* grid square : 10 X 10 km

** number of birds counted on 3-km transect

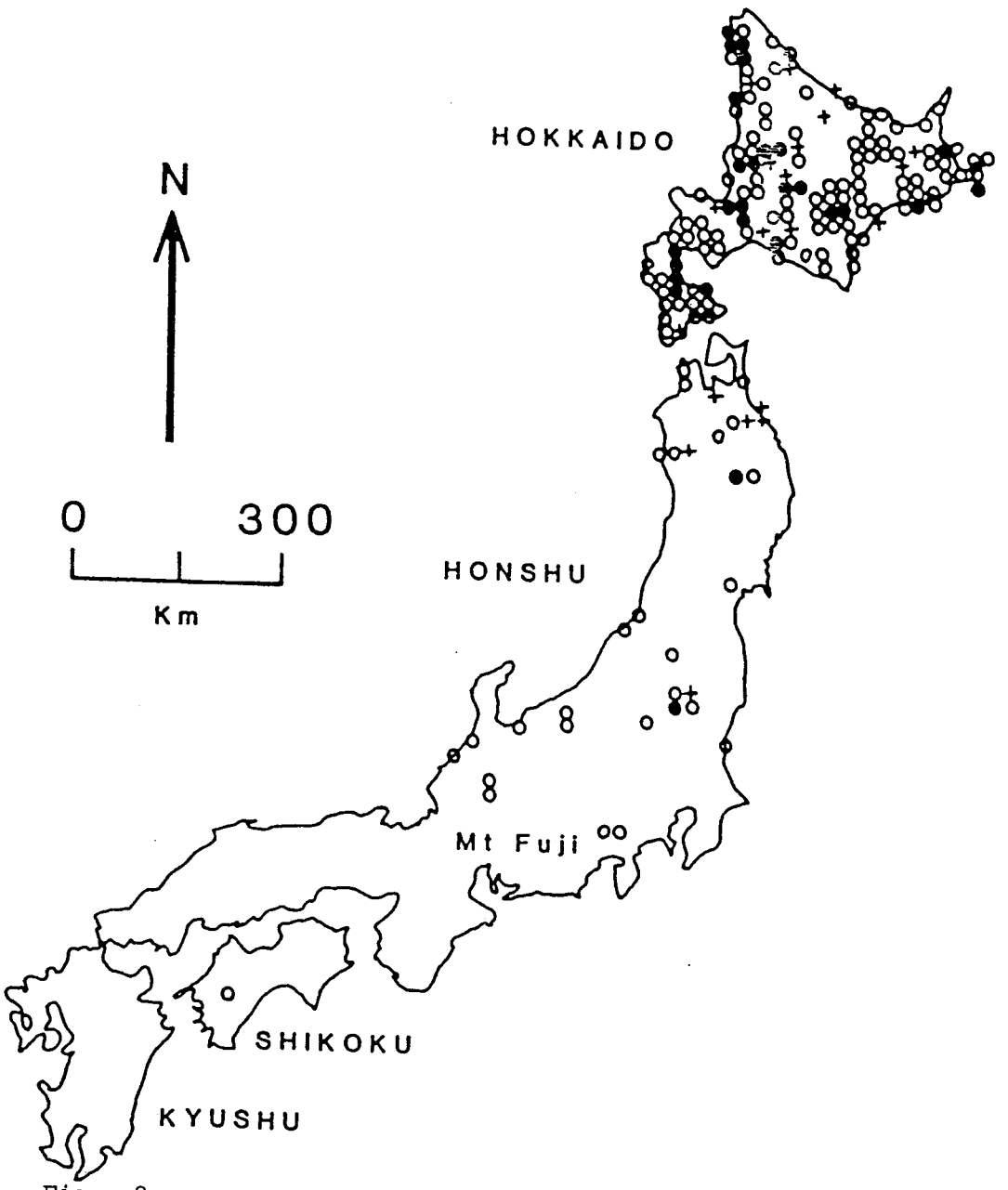

Fig. 2
Distribution of Latham's Snipe in Japan based on field survey of 20 × 20 km quadrants. Closed circle, breeding confirmed; open circle, breeding not confirmed but probable; plus sign, Snipe present (after Environmental Agency 1979b).

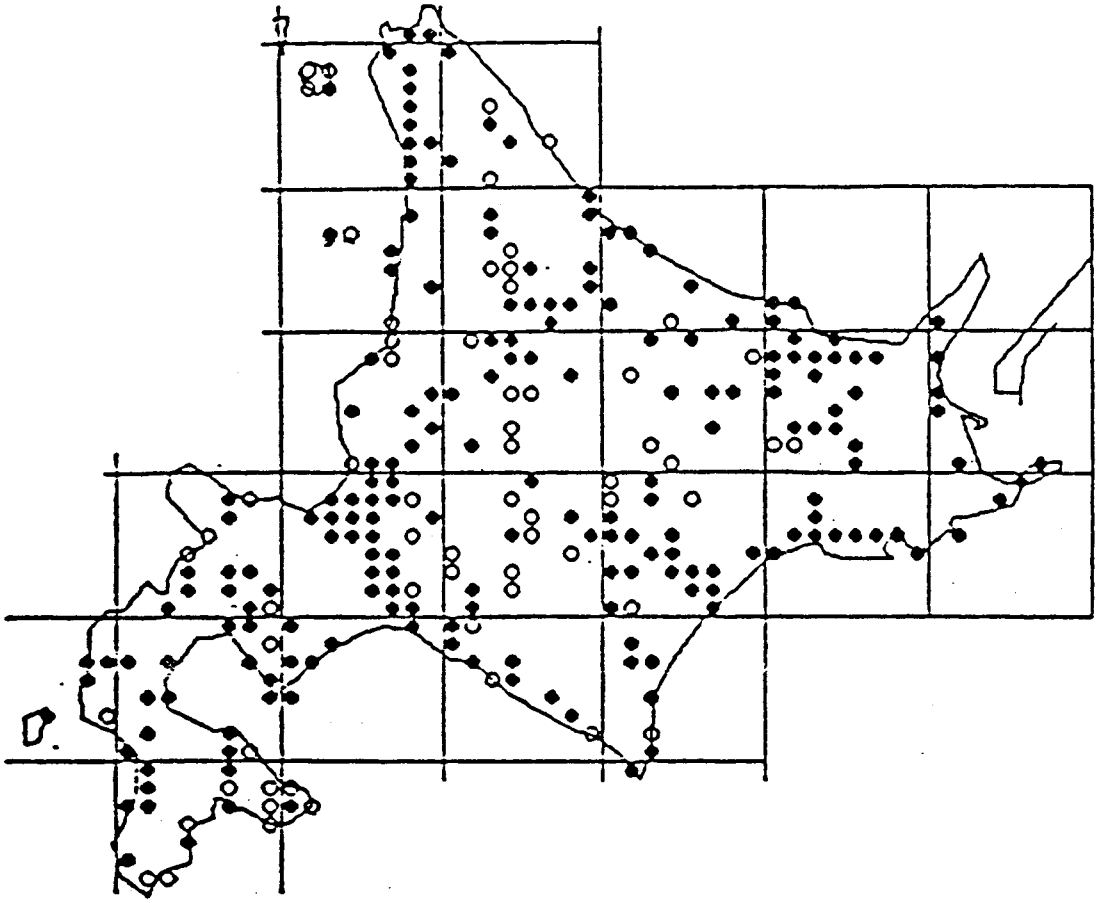

Fig. 2 Distirbution of Latham's snipes in Hokkaido. Closed circles indicate presence and open circles indicate absence when snipe counts were carried out.

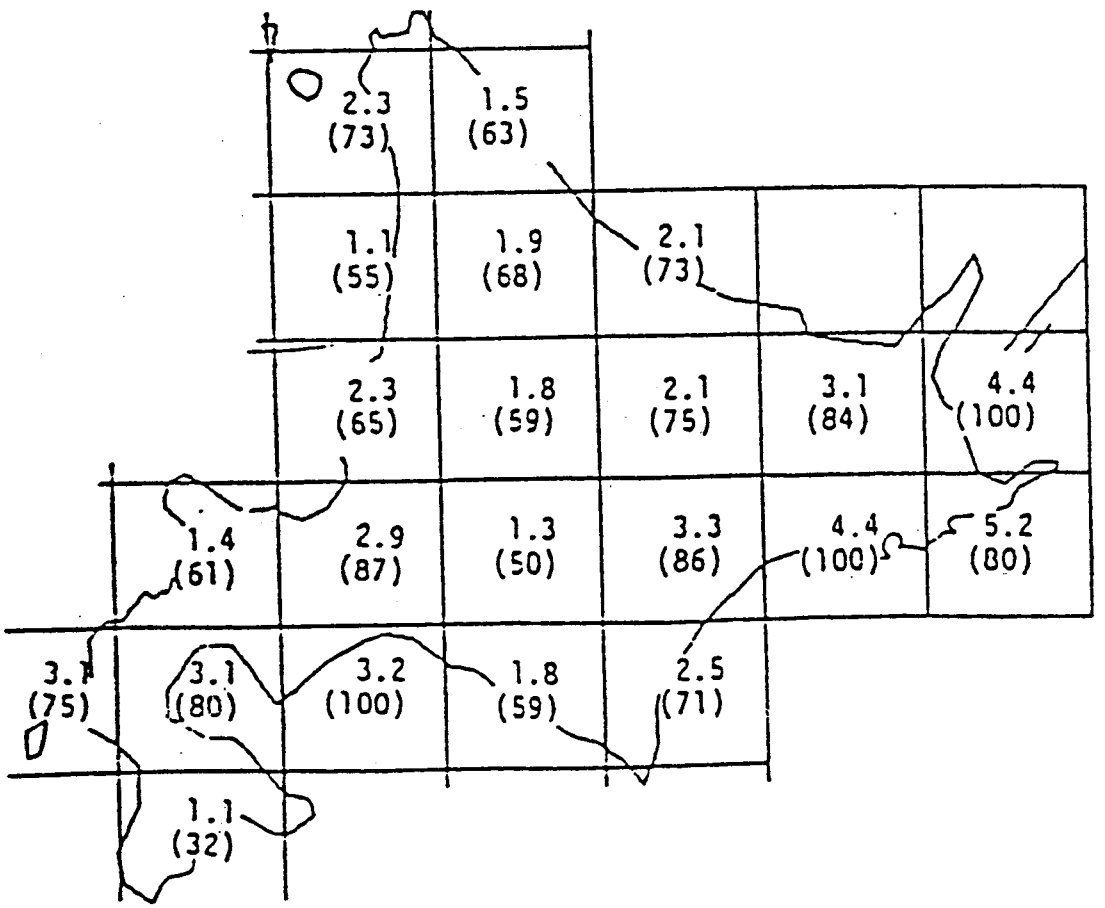

Fig. 3 Average numbers of Latham's snipes counted on the 3-km transect and percent of quadrats in which snipes were observed.

NORTH AFRICA

Some notes on the woodcock season 1988/89 in Morocco

Joachim A. Wadsack

This last season has been one of the best since 1977. First birds were recorded by 11 November 1988 at Pays de Zaer, others must have arrived by November 18 and 21. Considerably more woodcock were flushed here (average of 7.9 birds per 3.9 hours hunting trip during 15 days in the period end of November until beginning of March) than in the Mamora Forest. Weights of (28) woodcock bagged ranged between 250 and 340, on average 292 grams. Rainfall was lower than in previous winters.

The annual woodcock bag in Morocco is estimated well below 1000 birds. Even lower figures are expected for the future, since waterfowl and wader hunting is now reduced to one day per week, with a bag limit of 4 woodcock per day per hunter.

The portion of juveniles in the bag has obviously increased during recent years. Wing samling conducted by Clausager and Fadat revealed the following age-ratios:

1986/87 (n=13):	54% ad.	46% juv.
1987/88 (n= 5):	- -	100% juv.
1988/89 (n=28):	25% ad.	75% juv.

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NORWAY

Woodcock ringing in Norway - a report on two missions of the O.N.C., France

Y. Ferrand and F. Gossmann

I- Introduction

After 10 years of woodcock studies in France, we have thought that it was necessary to develop contacts with the main countries from which the woodcocks wintering in France were coming.

Several reasons have justified this action. To follow the fluctuations of the size of the whole woodcock population in Europe, we have to estimate the survival rates of the different populations. Their mixture during the wintering period makes calculations difficult. Moreover, the analysis of the recoveries in the breeding areas, from the rings that have been put on during the wintering period, is strongly biaised because the probabilities of recovery in each country are unequal. They are linked to particular hunting methods and we can expect to obtain such data in Sweden and the USSR. Therefore, it seems necessary to ring the birds before their departure to the wintering areas in order to identify more easily their geographical origin.

The ringing of chicks, which is the best technique for calculating the survival rate of a species, cannot provide a great number of annual data because of the difficulty of catching woodcocks.

Ringing of less than one year old birds at the beginning of the after-breeding migration reduces the effect of the juvenile mortality in the calculation of the survival rate. Therefore, the possibility of ringing a great number of birds in this class of age, in spite of the solitary behaviour of this species, seems a great asset to us, the more so as only the relative variations in the survival rate are our objective and not the absolute value. We should not forget that these calculations privilege the effect of hunting mortality compared with the natural mortality in the first year.

From ringing data, HEMERY et al(1978) have proved that Brittany principally received woodcocks from Norway during the wintering period. For this reason we went to this country in 1987 and 1988 to test the

effectiveness of the method used during winter in France for catching woodcocks at the beginning of migration and to instigate ringing of this species in Norway.

II- Catching conditions

1- Method

The general method was described by GOSSMANN et al(1988). The lighting material was similar, but the great net was replaced by a hand net of 6 meters long and 1.5 m in diameter. Its use, which requires only 2 people, appeared better adapted to the field conditions. During each mission, 2 teams of 2 people were present.

First catching is the result of an important work of "clearing": e.g. definition and research of favourable habitats. More than 100 people were met, particularly landowners, to get permission to walk through their properties. Local informations about the species were collected by this means. The time spent on this activity lead us to think that a first mission of preparation is essential for a maximal efficacy of the ringing teams.

2- Catching sites

The ringing operations occurres from the 17th of October to the 30th of October in 1987 and from the 19th of October to the 4th of November in 1988 in the vicinity of Stavanger(fig1), in 14 sites.

The permanent meadows appeared as the best nocturnal habitats, and particularly those located above the tree line or more generally those located on the high plains towering above these forests.

III- Results

1- Quantitative report

1-1 Number of captures

During the 2 missions, 172 woodcocks were ringed. Details are shown in table 1.

1-2 Success rate and efficiency

1-2-1 Success rate

The success rate (number of captures/number of contacts) was 36.1% (47/130) in 1987 and 29.4% (125/425) in 1988. The difference is not significant (χ^2 =0.884<3.84,p=0.05), although the very strong luminosity (full moon and clear sky) observed in 1988 was inconvenient to come near the birds.

1-2-2 Efficiency

The efficiency perhour can only be calculated for the 1988 mission, because the sites to prospect were known and the efficiency was maximal at the beginning of our stay.

The real time of prospection is about 2h30. During the 32 trips (16 per team), the mean eficiency per hour was 1.6 captures. The best results were obtained on October 26 and November 1 with 19 and 17 ringed woodcocks. At that time the efficiency per hour was 3.8 and 3.4.

2- Qualitative report

2-1 Age-ratio

Three classes of age were distinguished: adult,young (less then one year old) from early broods, young from late broods [FADAT (1981)]. The distribution of captures by class of age is shown in table 1.

The young birds represent 68.6% (118/172) of the captures and the late-brood young 53.4% of the total of young, that is to say about 20% more than the proportion found in the hunting bag in France [FADAT (1987)]. This result confirms the hypothesis of a greater number of late-brood young in the Scandinavian populations. The distribution of each class of age in the samples of 1987 and 1988 do not show a significant difference (χ^2=4.97<5.99, p=0.05).

2-2 Weight

The average weight is 350.7g (σ=28.9;n=44) in 1987 and 354.4g (30.9;125) in 1988. The comparison of these values with those obtained for the same species in the wintering areas, 310g [FADAT and LANDRY (1983)], leads us to think that the additional weight is due to fat accumulation at the beginning of the migration period.

2-3 Wear of primaries

From the degree of wear of the primaries we can divide the young into 4 classes: no wear,slight (wear of the end of the inner web), moderate (wear of inner web with indentations), strong (wear of inner and outer webs with indentations). Table 2 shows that the greatest part of the birds present a moderate wear. As it is strongly probable that this wear is proportional to the distance covered by the birds, we conclude that these birds had already begun their migration over several hundred kilometers. The Scandinavian breeding area extends nearly to the Artic circle and so, some woodcocks could have covered 1/3 of their migratory route.

3- Recoveries

Among the 47 woodcocks ringed in 1987, one was recovered during the autumn-winter 1987-1988 in Great-Britain, in Norfolk. At present, we know that only one other bird has been recoverd among the 125 woodcocks ringed in 1988.

The average recovery rate of Norwegian woodcocks is about 7% and thus we expect to obtain several other data from ringed birds.

IV- Conclusion

Although the chronology of the after-breeding migration of woodcocks in Norway is badly-known, the informations that we have collected from hunters and biologists show that the dates choosen for the 2 missions were in a period of high migratory intensity. On the 30th of October 1987 and the 27th of October 1988, we observed 33 and 79 birds and these dates appear like peaks of migratory intensity.

The high proportion of young birds in the captures goes in the direction of our objectives. Furthermore, the 172 woodcocks ringed in 27 nights prove the efficiency of the method. With a classical method, only 347 woodcocks had been ringed in Norway during 70 years.

Because this game bird is little appraised by the Norwegians, the biologists of this country didn't pay special attention to the woodcock. During our 2 stays we have developed very good relations and little by little succeeded to make several people sensitive to the problem of the management of the populations of this migratory species. Now a team is in service and probably will continue this action with a financial supply from the Rogaland Administration in charge of Environnement.

In view of the success of the operation, our wish is to develop as much as possible the ringing of woodcocks in all the countries of their breeding area in the Western Palearctic.

Acknowledgments: The realization of our missions would have been very difficult without the support of the Federations Départementales des Chasseurs des Côtes du Nord et du Morbihan. In making the participation of Mrs J.P. RICHARD,H.JAMIN and G.SOURGET,D.LE GOURIEREC easier, to work for these Federations and in allowing us to use 4 cars, they contributed to the success of the operations. We also thank Dr O.RUNDE from the Museum of Stavanger who has permitted us to stay at the Revtangen Station during each missionand G.O.TOFT for his efficient support during the preparation and th e realization of the job in the field.

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FIGURE 1 : Location of the study area

Age / Class / Year	Ad	JNP	JNT	Total
1987	11	21	15	47
1988	43	34	48	125
Total	54	55	63	172

Table 1 : Distribution of captures by class of age (Ad:adult,JNP:young (less than one year old) from early broods, JNT:young from late broods)

Wear / Year	U_0	U_1	U_2	U_3
1987	-	9	16	7
1988	7	16	41	14

Table 2 : Distribution of young less than one year old by class of wear of primaries.
U0:no wear ; U1:slight wear ; U2:moderate wear ; U3:strong wear
(see text for definitions)